

APPLICATION GUIDE

EDITION 22



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GENERAL GUIDELINES

INTRODUCTION

This guide is designed to supply the professional applicator with the necessary information required to apply our products; it is not intended as a 'How To' guide for the do-it-yourselfer. We encourage you to read the entire guide carefully, especially those sections on safety before applying any product.

Safety Data Sheets (SDS) should be read by the applicator before applying an Awlgrip product. These documents contain extensive information for safe handling of our products. Please contact your local distributor, your Awlgrip technical service representative, or go to **awlgrip.com**.

Along with these application systems, the appropriate product datasheets should be reviewed before using a product.

Awlgrip Coating Systems are available worldwide. Local regulations may limit the availability of certain products in some parts of the world. In some cases packaging will differ depending on local specifications and standards.

Do not incorporate any thinner, additive, modifier, converter, primer or related product that is not specifically recommended by Awlgrip into any Awlgrip Coating System. Such substitution can jeopardize the unique characteristics of the Awlgrip Coating System resulting in poor cosmetics and/or premature failure of the system and will void Awlgrip's Limited Warranty.

SAFETY CONSIDERATIONS

Please read carefully the cautions and warnings on the Awlgrip labels.

They are there for your benefit. The recommended safety equipment ensures the safe use of our products. If in doubt, please contact your local Awlgrip technical service representative.

Safety Data Sheets (SDS's) and Technical Datasheets (TDS) are available on **awlgrip.com**.

For any urgent health and safety concerns please refer to contact information on the Awlgrip product's label.

If you have any urgent technical service questions, please reach out to your local distributor which can also be found on **awlgrip.com**

SURFACE CLEANING

A clean, dry surface is essential to the success of any coatings application. Up to 12 pre-paint process steps have been identified to ensure a project is ready for receiving the final topcoat. In some cases, not all the steps are required, but this check list provides a helpful reminder of surface preparation and pre-painting process stages.

This checklist will help applicators minimize paint surface ‘defects and other effects’ (some listed below) that are a result of substrate, airborne or environmental contaminations.

12 Pre-Paint Process Steps

Area	Step	Process
Pre-Clean (Refit Only)	1	Surface Contamination Assessment and Removal (Before sanding) - Assess for ceramic coatings. Use an approved ceramic removal process as provided by the ceramic coating company, if necessary. It is the responsibility of the applicator to ensure all ceramic coatings are properly removed. If not, surface contamination is possible with the result being an inferior paint job. - Assess coatings for chemical compatability. (EU) International Super Cleaner YMB820 or strong detergent and hot water wash down the area to be painted to remove contamination, prior to sanding. (NA / AP) Use Awlprep Plus OT0115 / Interlux Y202 (NA) / Interlux Fiberglass Surface Prep YMA601V (NA) or strong detergent wash the area to be painted to remove contamination, prior to sanding.
Prepare and Clean	2	Sanding Stage Clean down work area and vessel surface to be painted including scaffolding, using clean compressed air and vacuum.
	3	(EU) Optional wash down vessel surface using International Super Cleaner (or detergent) + water. (NA / AP) Optional wash down vessel surface using detergent and fresh water.
	4	Rinse vessel surface using fresh clean water only.
	5	Dry vessel surface using clean lint-free dry cloths. The use of clean compressed air during the drying process, will help remove trapped moisture and potential trapped contaminants. During this stage, ventilation and air movement is important to assist thorough drying.
	6	(EU) Solvent clean using Awlgrip Surface Cleaner OT0340 / International 600 Wipe Down Solvent ITA075 with the 2 cloth method. (NA / AP) Solvent clean using Awlprep 400 Wipe Down Solvent OT0170 with the 2 cloth method. See solvent cleaning best practices below for details.

Protect Vessel Surface	7	If anti-dust (tacky coating) is to be used, cover surface to be painted with plastic. It is important the surface must be completely dry (both solvent and water) before covering. Plastic should be on the surface for the minimum amount of time.
	8	Remove plastic as soon as antidust is applied. Best practice is to roll up plastic to avoid excessive surface contamination as it is being removed. Remember, removal of plastic will build up static – fresh water washing will help reduce static.
Final Clean	9	a) If water-based tacky (anti-dust) coating or plastic sheeting has been used, conduct an additional fresh water wash and dry thoroughly. b) (EU) Solvent clean using Awlgrip OT0340 / International Wipe Down Solvent 600 with the 2 cloth method (to remove possible plastic residues). (NA / AP) Solvent clean using Awlgrip OT0170 with the 2 cloth method (to remove possible plastic residues).
	10	Optional (where available): Awlprep Surface Cleaner OT0008 Alcohol wipe down to help remove any potential surface moisture and or (stubborn / difficult) contaminations.
	11	Tack cloth surface with gentle compressed air (2 – 3 bar / 30 – 45 p.s.i) to remove final trapped dust (you could use an anti-static gun for this).
	12	Final tack cloth just before application – see below table for best tack cloth practices.

Two Cloth Cleaning Method

1. The surface should be cleaned thoroughly of all dust, using a vacuum or clean dry compressed air to blow while wiping with clean, oil-free, dry cotton cloths.
2. Soak one cloth in EU OT0340 Surface Cleaner and NA / AP Awlprep 400 use this cloth to wet the surface.
3. Use a dry second cloth to wipe the surface dry and lift the contamination off the surface.
 - * Work small areas (1sq. m or 10sq. ft) to keep the surface cleaner from drying before the second rag wipes it clean to minimize and eliminate wipe marks.
 - * Repeat steps 2 and 3, changing rags frequently, until the surface is residue free.
 - * Wiping the surface with one wet cloth only smears contamination around. Be sure the cloth used does not have any contaminants; clean cotton works the best. The surface must be dry before using tack rags.

See recommended wipe-down solvent and product cleaning chart on page 55 for more information.

DELUXE TACK RAGS

Tack rags are used just before painting to remove the lightest dust or dirt from what would otherwise be considered a clean, ready to paint surface. Tack rags are used before final primer and topcoat applications. They are usually not needed when applying fairing materials or surfacers. When tacking a primer or topcoat surface, use only Awlgrip Deluxe Tack Rags (#73009 / SAP Code 5503546). They have the proper type and amount of resin to pick up dust without leaving contamination on the surface. Other tack rags can easily leave a residue that causes fisheyes and cratering of the topcoat. Be careful not to use excessive hand pressure when using tack rags. A light dusting is all that is necessary, let the resin do the work. Even Awlgrip Deluxe Tack Rags can leave a resin on the surface if used improperly. Make sure the surface is thoroughly dry before using Awlgrip Deluxe Tack Rags.

TAPING AND MASKING MATERIALS

Masking Tape Guidance:

Masking tapes are produced in various grades. Review tape manufacturers' recommendations. Make your selection based on your working conditions and technique. Consult the tape manufacturer and / or your Awlgrip local representative for further guidance.

- Safe taping times will vary. Review tape manufacturers' recommendations and then make your selection based on your temperature, ventilation, humidity and amount of paint applied.
- Carry out tape testing with the intended tapes and paints in the environment prior to project application, ensuring awareness of times and results.
- 'Tape Free' time means when tape can be added to a newly curing paint without damaging the surface. This is specifically for applying lines / boot stripes etc., but tape must be removed within 24 hours. 'Tape free' is not time to applying masking tape or coverings. (See 'Covering / Masking newly applied paint').
- When applying additional colors, decals or stripes, always test tape on adjacent painted (non-vessel surface) as safety check.

Masking Paper Guidance:

Masking papers are manufactured in various grades. The solvents in urethane and epoxy coatings require a paper with excellent resistance to solvent penetration. Consult the product manufacturer.

- 1) Where possible, do not mask or paper fresh paint. Plastic sheeting is by far most damaging.
- 2) If covering the paint is imperative, wait until second cure cycle is completed (72 - 96 hours / 3 - 4 days at 25°C / 77°F). Increase waiting period by 4 hours for every 1°C / 2°F below 25°C / 77°F.
- 3) If masking with paper, use only proven residue-free tested tapes (low tack tapes). Please test in your environment. If residues are left under tape, more time must be left before taping / masking.
- 4) Where possible, tape masking paper outside of the painted surface / surrounding unpainted area.
- 5) It is important the surface must be completely dry (both solvent and water) before any covering of the surface.

6) Plastic should be on for the minimum amount of time possible.

Care should be taken when using lightweight plastic films as these may cause tracks or marks to be left on the surface that cannot be removed. A paper barrier is recommended.

7) Ensure any plastic sheeting applied is 'the correct way out'.

8) Do not use plastic sheeting on a surface for longer than two days.

Condensation can form under the plastic causing blistering, bubbling or loss of gloss in the paint finish.

9) Do not use newsprint or newspapers; these can stain the paint finish.

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COMPRESSORS AND COMPRESSED AIR GUIDANCE

- A clean, oil-free and dry air supplied at a consistent pressure and volume is essential for operating application equipment, air powered tools and for blowing off surfaces prior to painting.
 - The supply system must be fitted with oil / water separators, refrigerant or desiccant dryers and must have an air receiver to meet the demands of the system's maximum operating capacity.
 - The compressed air system must be suitably designed to ensure efficient operation and minimal pressure drop. Pressure drop can be reduced by ensuring all pipework and fittings are smooth bore and tight bends are reduced or eliminated.
 - When setting up a compressed air system, optimum performance is achieved by using a recirculating main loop with individual drop downs from it as opposed to a single straight line run from the compressor.
 - Appreciation needs to be gained for pressure drop in flexible lines and their length should be kept as short as possible with the largest workable internal diameter. For example, 190 meters of 10mm airline will experience 12.5% pressured drop. 10 meters of 5mm airline will experience 62% pressure drop.
 - To ensure spray equipment is set up correctly, the atomizing pressure must be measured at the handle of the spray gun.
 - Ensure that high flow fittings are used and when they are used, their use is kept to the minimum number of connections. It is better to have a longer length of hose than have multiple connections in the system.
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SANDING AND SANDPAPER

Read all health and safety information contained in Safety Data Sheets. Always thoroughly clean the surface before sanding. See surface cleaning on **page 4**.

1. When sanding or grinding, work in areas with adequate ventilation, maintaining a continuous flow of fresh air.
2. Do not breathe sanding or grinding dust.
3. Keep sanding dust off skin and out of eyes.
4. Wear a properly fitted chemical cartridge / mechanical filter respirator and other appropriate PPE during sanding, grinding and blowing off.
5. Keep bystanders and unprotected workers out of sanding and grinding areas.

Proper sanding promotes adhesion for the next coat. Excessive sanding or using too coarse a grit can open pores in the surface or create a sanding scratch profile too deep to be filled by the next product to be applied. This can cause porosity holes / sand scratch print-through in certain substrates.

There are four basic types of sanding throughout this book, references are made to each type. All four types may be accomplished by hand, machine or block. The surface shape, size and quality requirements will determine the tools or combination of tools required.

1. ***Scratch Sanding:***

Scuffing or scratching a smooth surface to create a profile to promote adhesion of another coating. A Scotch-pad may be used to remove light overspray from primer and to remove peaks from the sand scratch. Caution is recommended when considering only a Scotch-pad for scratch sanding between topcoats as adhesion will be questionable. Sandpaper is recommended.

2. ***Smooth Sanding:***

Sanding the surface smooth of orange peel or fine texture. This is usually done with small blocks, small pad machine or hand sanding using relatively fine grits. This type of sanding is not considered fairing.

3. ***Block or Board Sanding:***

Is used for fairing a surface. The depth and height of the highs and lows, and the width between them, will determine the size of the block / board as well as the amount of filler / surface products needed to fair the surface.

4. ***Grinding:***

Is for the removal of material. Grits are coarse, P24 - P36 - P60, with the primary purpose being removal of undesirable material and creating surface profile. Grinding would be used to brighten corroded metal, remove old coatings and to remove heavily oxidized or damaged gelcoat. Cleaning and priming of metals must be done immediately after grinding to prevent surface corrosion returning.

APPLICATION EQUIPMENT

Ventilation/Respiratory Protection

IMPORTANT:

Use only with adequate ventilation. Maintain continuous flow of fresh air. Do not breathe vapors, spray mists or sanding dusts. Wear appropriate, properly fitted, supplied air respirator during and after application unless air monitoring demonstrates vapor and particulate levels are below applicable limits. Follow respirator manufacturer's directions for respirator use. Engineering or administrative controls should be implemented to reduce exposure. Provide sufficient mechanical (general and / or local exhaust) ventilation to maintain exposure below TLV's (Threshold Limit Values).

Always refer to international and national guidance on respirator use when spraying applying any paint products. ISO 16975-3 contains information about respiratory protection programs covering matters like facial fit testing and cleaning and testing of respirators.

Personal Protective Equipment

CAUTION:

Do not get in eyes, on skin or on clothing. Use solvent-resistant safety eyewear with splash guards. Solvent-impermeable gloves, clothing and boots should be worn to prevent skin contact. When applying an **Awlgrip product** or any other isocyanate containing product, suitable respiratory protective equipment must be used.

SPRAY EQUIPMENT

'Ten Steps to Success' —

Key points on Equipment for Awlgrip Applications

1. ***You need good quality, well maintained equipment.***

If you are using the best paint, you limit your chances of success if you are not using the best equipment in the best condition. This includes ensuring the air hoses are of the correct type and capacity.

2. ***Standardize your equipment.***

When more than one sprayer will be working the job, it pays to have everyone using the same make and model of gun / pressure pot etc. This also includes having the same aircap, tip and nozzle, as recommended by the gun / hoses / air manufacturer.

3. ***Ensure clean gun/hoses/air.***

If the air hoses are dirty; replace them. Check the air cleanliness by running air for 10–15 mins through a tack rag. Change filters and service traps regularly. Ensure your paint fluid hoses are suitable for the paint products being applied. Please consult with your paint equipment manufacturer for suitability. Please note, there are several materials that are used for paint fluid line manufacturing that are not suitable for many two component Yacht coatings. For example, EDPM (ethylene propylene diene monomer) rubber fluid lines should be avoided.

4. ***Check environment.***

Temperature (air and substrate), humidity and airflow may all need controlling to optimize your result. Ensure only conductive air lines and fittings are used as recommend in the spray gun manufacturer's recommendations. When applying products using electrostatic equipment it is vital that anything non-essential is removed from the application environment. Anything remaining, including applicators and lines men, must ensure that they and their equipment are suitably earthed to avoid the build up of electrostatic charge.

5. ***Once the environmental situation is known,*** choose the correct reducer and thin to the recommended viscosity.

6. ***Determine the optimum gun setup.***

Use the '3 step fan check' to get your paint atomization set right. Check the fluid flow rate and air pressure at the gun.

7. ***Synchronize gun settings.***

Check all sprayers have the same fluid flow and air pressure, and that these are not modified during application.

8. ***Record the settings for future reference.***

9. ***Spray a test area.***

At the start of the job and before each coat, spray a decent sized area on a separate panel and check the appearance and wet film thickness.

10. ***Work well within the pot life.*** As the paint continues to induct and viscosity increases, the behavior of the coating can change, affecting the final result.

DEVILBISS SPRAY GUN SET-UPS

Equipment Product	Spray Gun	Type	Air Cap	Tip Size	Fluid Flow	Atomizing pressure @ handle (except where noted)	Application Area size	Suitable for High Pressure application equipment	High Pressure Fluid Tip Size
Hull Guard Extra	Pro Lite	Pressure	TE40	1.8	250 / 300 ml/min	1.95	L	Airless	17 - 21 Thou
	Pro Lite	Gravity	TE20	2		2	S		
	Advanced HD	Pressure	S22	1.8	250 ml/min	2.3	L		
Ultra Build	Pro Lite	Pressure	TE 40	1.8	300 / 250 ml/min	1.85	L	Air Assisted Airless	15 - 21 Thou
	Pro Lite	Gravity	TE20	1.8		1.9	S		
	Advanced HD	Pressure	S22	1.8	200 / 250 ml/min	2	L		
High Build	Advanced HD	Gravity	S16+	1.8		2.2	S	Air Assisted Airless	15 - 21 Thou
	Pro Lite	Pressure	TE 20	1.4	280 ml/min	1.85	L		
	Pro Lite	Gravity	TE 40	1.6		1.85	S		
Epoxy Surfacing Primer	Advanced HD	Pressure	S22	1.4	280 ml/min	2.2	L	NO	N/A
	Advanced HD	Gravity	S20	1.6		2.3	S		
	Pro Lite	Pressure	TE40	1.4	200 ml/min	1.9	S		
Quick Build Sealer	Pro Lite	Pressure	S22	1.3	200 ml/min	2.25	L	NO	N/A
	Advanced HD	Gravity	S20	1.4		2.2	S		
	Pro Lite	Pressure	TE 40	1.2	200 / 250 ml/min	1.85	S		
Quick Build Surfacer	Pro Lite	Gravity	TE 20	1.4		1.85	S	NO	N/A
	Advanced HD	Pressure	S20	1.2	200 / 250 ml/min	2.25	L		
	Advanced HD	Gravity	S10+	1.4		2.25	S		
Awkquick	Pro Lite	Pressure	TE 40	1.3	200 / 250 ml/min	1.85	L	NO	N/A
	Advanced HD	Pressure	S20	1.3	200 / 250 ml/min	2.2	L		
	Advanced HD	Gravity	S20	1.4		2.25	S		
545 Primer	Pro Lite	Pressure	TE 40	1	220 ml/min	2	L	Air Assisted Airless	13 - 19 Thou
	Pro Lite	Gravity	TE 40	1.2		1.9	S		
	Advanced HD	Pressure	S20	1	220 ml/min	2.3	L		
Awkrip HDT	Advanced HD	Pressure	S10+	1.2		2.25	S	No	N/A
	Transflex	Electrostatic	V65	1	250 ml/min	4.5	L		
	Pro Lite	Pressure	TE 40	0.85	250 - 300 ml/min	1.9	L		
Awkcraft 3000 / Awkcraft 2000	Pro Lite	Gravity	TE 20	1.2		2	S	No	N/A
	Advanced HD	Pressure	S20	0.85	250 - 300 ml/min	2.3	L		
	Advanced HD	Gravity	S20	1.2		2.4	S		
Awkcraft SE (Solids and Effects)	Transflex	Electrostatic	V65	0.75	250 ml/min	4.5	L	No	N/A
	Pro Lite	Pressure	TE 40	1	250 ml/min	1.9	L		
	Pro Lite	Gravity	TE 20	1.2		2	S		
Awkrip Topcoat (GH Product Line)	C-Spray	Pressure	CDT	0.85	250ml/min	2.25	L	Air Assisted Airless Possible but not recommended	10 - 14 Thou
	C-Spray	Gravity	CDTG	1.2		2.25	S		
	Advanced HD	Pressure	S20	0.85	250 ml/min	2.3	L		
International Perfection Pro Topcoat	Advanced HD	Pressure	S20	1	250 ml/min	2.25	S	No	N/A
	DV 1	Gravity	DV 1 C1 Plus	1.2		2	S		
	Transflex	Pressure	V65	0.75	250 ml/min	4.5	L		
International Perfection Pro Undercoat	SPR Pro Lite	Pressure	TE 5	0.8 / 1.0	2.0 / 2.2	L		No	N/A
	Pro Lite	Pressure	TE 40	0.85	200 ml/min	1.8	L		
	Pro Lite	Gravity	TE 20	1.0 / 1.2		1.85	S		
International / Interlux Interior Primer 550	C-Spray	Pressure	CDT	0.85	200 ml/min	2	L	Airless / Air Assisted Airless	15 - 21 Thou
	C-Spray	Gravity	CDTG	1.0 / 1.2		2	S		
	Advanced HD	Pressure	S20	0.85	200 ml/min	2.1	L		
International / Interlux Interior Finish 750 / 770	Advanced HD	Pressure	S10+	1.2		2.1	S	No	N/A
	DV 1	Gravity	DV 1 B1 Plus	1.2		2	S		
	Transflex	Electrostatic	V65	0.75 / 1.0	200 / 250 ml/min	4.5	L		
International Interspine 890	SPR Pro Lite	Pressure	TE 5	0.8 / 1.0	2.0 / 2.2	L		No	N/A
	Pro Lite	Pressure	TE 40	0.85	250 ml/min	1.85	L		
	Pro Lite	Gravity	TE 20	1.2		1.9	S		
International Epoxy GP Coating	C-Spray	Pressure	CDT	0.85	250 ml/min	2.25	L	Air Assisted Airless Possible but not recommended	10 - 14 Thou
	C-Spray	Gravity	CDTG	1.1 / 1.2		2.3	S		
	Advanced HD	Pressure	S20	0.85	250 ml/min	1.8	L		
International / Interlux Interior Primer 550	Advanced HD	Pressure	S20	0.85	250 ml/min	2.25	L	No	N/A
	C-Spray	Pressure	CDT	0.85	250 ml/min	2.2	L		
	C-Spray	Gravity	CDTG	1.2		2.25	S		
International Perfection Pro Topcoat	Advanced HD	Pressure	S20	0.85	250 ml/min	2.25	L	No	N/A
	Advanced HD	Gravity	S20	1.1 / 1.2		2.25	S		
	Transflex	Electrostatic	V65	0.75	250 ml/min	4.5	L		
International Perfection Pro Undercoat	Pro Lite	Pressure	TE 40	0.85	250 ml/min	1.9	L	No	N/A
	Pro Lite	Gravity	TE 20	1.2		1.9	S		
	C-Spray	Pressure	CDT	0.85	250 ml/min	2.25	L		
International / Interlux Interior Primer 550	C-Spray	Gravity	CDTG	1.1 / 1.2		2.3	S	Airless / Air Assisted Airless	15 - 21 Thou
	Advanced HD	Pressure	S20	0.85	250 ml/min	2.25	L		
	Advanced HD	Gravity	S20	1.1 / 1.2		2.25	S		
International Interspine 890	Transflex	Electrostatic	V65	0.75 / 1.0	250 ml/min	4.5	L	No	N/A
	Pro Lite	Pressure	TE 40	1.3	250 - 300 ml/min	1.85	L		
	Pro Lite	Gravity	TE 20	1.4		1.85	S		
International Epoxy GP Coating	Pro Lite	Pressure	TE 40	1.8	250 - 350 ml/min	1.85	S	No	N/A
	Pro Lite	Pressure	TE 40	1.6		1.95	S		
	Pro Lite	Gravity	TE 20	1.8		1.95	S		
International / Interlux Interior Primer 550	Pro Lite	Pressure	TE 40	1.6	200 ml/min	2.2	L	No	N/A
	Pro Lite	Gravity	TE 20	1.8 / 2.0		1.85	S		
	Pro Lite	Gravity	TE 20	1.8 / 2.0	200ml/min	1.8	L		
International / Interlux Interior Primer 550	Pro Lite	Pressure	TE 40	1.6		1.85	S	No	N/A
	Pro Lite	Pressure	TE 40	1.6		1.85	S		
	Pro Lite	Gravity	TE 20	1.8 / 2.0		1.85	S		
International / Interlux Interior Primer 550	Pro Lite	Pressure	TE 40	1.8 / 2.0	280 - 380 ml/min	2	S	Airless / Air Assisted Airless	1.9 - 2.5 Thou
	Pro Lite	Pressure	TE 40	1.8 / 2.0		1.85	S		
	Pro Lite	Gravity	TE 20	1.8 / 2.0		1.85	S		

CLICK HERE TO SEE TABLE AT FULL SIZE

SATA SPRAY GUN SET-UPS

Equipment Product	Spray Gun	Type	Tip Size	Fluid Flow	Atomizing Air Pressure (Excludes Air Handled When Refilled)	Application Area Size	Suitable for High Pressure application equipment	High Pressure Fluid Tip Size
Hullgard Extra	SATAgel 1000 RP	Gravity	1.8 / 2.5	n/a	1.5 bar / 2 bar	S	Airless	17 - 21 Thou
	SATAgel 100 B P	Gravity	P	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.5 / 1.7	250 / 300 ml/min	1.8 bar / 2.5 bar	L		
Ultra Build	SATAgel 1000 RP	Gravity	1.8 / 2.5	n/a	1.8 bar / 2 bar	S	Air Assisted Airless	15 - 21 Thou
	SATAgel 100 B P	Gravity	P	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.7 / 2.0	200 / 250 ml/min	1.8 bar / 2.5 bar	L		
High Build	SATAgel 1000 RP	Gravity	2.0 / 2.5	n/a	1.8 bar / 2 bar	S	Air Assisted Airless	15 - 21 Thou
	SATAgel 100 B P	Gravity	P	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.5 / 2.0	170 / 260 ml/min	1.8 bar / 2.5 bar	L		
Epoxy Surfacing Primer	SATAgel 1000 RP	Gravity	2.0 / 2.5	n/a	1.8 bar / 2 bar	S	NO	N/A
	SATAgel 100 B P	Gravity	P	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.5 / 2.0	170 / 260 ml/min	1.8 bar / 2.5 bar	L		
Quick Build Sealer	SATAgel 1000 RP	Gravity	1.5 / 2.0	170 / 260 ml/min	1.8 bar / 2.5 bar	L	NO	N/A
	SATAgel 5000 RP	Gravity	1.0 / 1.3	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 3000 K RP	Pressure	0.8 / 1.1	200 / 250 ml/min	1.8 bar / 2.5 bar	L		
Quick Build Surfacer	SATAgel 1000 K RP	Pressure	0.8 / 1.1	200 / 250 ml/min	1.8 bar / 2.5 bar	L	NO	N/A
	SATAgel 5000 RP	Gravity	1.0 / 1.3	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 3000 K RP	Pressure	0.8 / 1.1	200 / 250 ml/min	1.8 bar / 2.5 bar	L		
Awlgrip	SATAgel 1000 RP	Gravity	1.3 / 1.5	n/a	1.8 bar / 2.5 bar	S	NO	N/A
	SATAgel 1000 K RP	Pressure	1.1 / 1.4	180 / 260 ml/min	1.8 bar / 2 bar	L		
	SATAgel 3000 K RP	Pressure	1.1 / 1.4	180 / 260 ml/min	1.8 bar / 2.5 bar	L		
S4S Primer	SATAgel 1000 RP	Gravity	1.0 / 1.3	n/a	1.8 bar / 2 bar	S	Air Assisted Airless	13 - 19 Thou
	SATAgel 1000 K RP	Pressure	0.8 / 1.1	180 / 260 ml/min	1.8 bar / 2 bar	L		
	SATAgel 3000 K RP	Pressure	0.8 / 1.1	180 / 260 ml/min	1.8 bar / 2.5 bar	L		
Awlgrip HDI	SATAgel 5000 RP	Gravity	1.1 / 1.2	n/a	2.0 bar / 2.5 bar	A	No	N/A
	SATAgel 5500 RP	Gravity	1.1 / 1.2	n/a	2.0 bar / 2.5 bar	S		
	SATAgel 3000 K RP	Pressure	0.8 / 1.1	250 - 300 ml/min	2.0 bar / 2.5 bar	L		
Awlcoat 3000 / Awlcoat 2000	SATAgel 5000 RP	Gravity	1.0 / 1.2	n/a	1.8 bar / 2.5 bar	S	No	N/A
	SATAgel 5500 RP	Gravity	1.1 / 1.2	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 3000 K RP	Pressure	0.8 / 1.1	250 ml/min	1.8 bar / 2.5 bar	L		
Awlcoat SE (Solids and Effects)	SATAgel 5000 RP	Gravity	1.0 / 1.3	n/a	1.8 bar / 2.5 bar	S	No	N/A
	SATAgel 5500 RP	Gravity	1.1 / 1.3	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 1000 K RP	Pressure	0.8 / 1.1	180 / 220 ml/min	1.8 bar / 2.5 bar	L		
Awlgrip Topcoat (1 / 1H Product Line)	SATAgel 5000 RP	Gravity	1.0 / 1.2	n/a	1.8 bar / 2.5 bar	L	Air Assisted Airless Possible but not recommended	10 - 14 Thou
	SATAgel 5500 RP	Gravity	1.1 / 1.2	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 3000 K RP	Pressure	0.8 / 1.1	250 ml/min	1.8 bar / 2.5 bar	L		
International Perfection Pro Topcoat	SATAgel 5000 RP	Gravity	1.1 / 1.2	n/a	1.8 bar / 2.5 bar	S	No	N/A
	SATAgel 5500 RP	Gravity	1.1 / 1.2	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 1000 K RP	Pressure	0.8 / 1.1	250 ml/min	1.8 bar / 2.5 bar	L		
International Perfection Pro Undercoat	SATAgel 3000 K RP	Pressure	0.8 / 1.1	250 ml/min	1.8 bar / 2.5 bar	L	NO	N/A
	SATAgel 5000 RP	Gravity	1.0 / 1.3	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 5500 RP	Gravity	1.1 / 1.3	n/a	1.8 bar / 2.5 bar	S		
International / Interlux Interior Primer 850	SATAgel 3000 K RP	Pressure	0.8 / 1.1	200 / 250 ml/min	1.8 bar / 2.5 bar	L	Airless / Air Assisted Airless	15 - 21 Thou
	SATAgel 1000 RP	Gravity	1.8 / 2.5	n/a	1.8 bar / 2 bar	S		
	SATAgel 100 B P	Gravity	P	n/a	1.8 bar / 2 bar	S		
International / Interlux Interior Finish 750 / 770	SATAgel 1000 K RP	Pressure	1.7 / 2.0	250 / 350 ml/min	1.8 bar / 2.5 bar	L	No	N/A
	SATAgel 5000 RP	Gravity	1.0 / 1.2	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 5500 RP	Gravity	1.1 / 1.2	n/a	1.8 bar / 2.5 bar	S		
International Intersprime 880	SATAgel 3000 K RP	Pressure	0.8 / 1.1	200 / 250 ml/min	1.8 bar / 2.5 bar	L	Airless / Air Assisted Airless	15 - 21 Thou
	SATAgel 1000 B RP	Gravity	1.3 / 1.8	n/a	1.8 bar / 2.5 bar	S		
	SATAgel 5000 RP	Gravity	1.1 / 1.5	180 / 260 ml/min	1.8 bar / 2.5 bar	L		
International Epoxy OP Coating	SATAgel 1000 RP	Gravity	1.8 / 2.5	n/a	1.5 bar / 2 bar	S	Airless / Air Assisted Airless	15 - 21 Thou
	SATAgel 100 B P	Gravity	P	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.5 / 1.7	250 / 300 ml/min	1.8 bar / 2 bar	L		
International Gelskald 200 / Interprotect	SATAgel 3000 K RP	Pressure	1.5 / 1.7	250 / 300 ml/min	2 bar / 2.5 bar	L	Airless / Air Assisted Airless	15 - 21 Thou
	SATAgel 1000 B RP	Gravity	1.8 / 2.5	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.5 / 1.7	200 ml/min	1.8 bar / 2 bar	L		
International Intersprime 620	SATAgel 1000 RP	Gravity	1.8 / 2.5	n/a	1.5 bar / 2 bar	S	Airless / Air Assisted Airless	15 - 21 Thou
	SATAgel 100 B P	Gravity	P	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.5 / 1.7	250 / 300 ml/min	1.8 bar / 2 bar	L		
International Epoxy Ticoat	SATAgel 3000 K RP	Pressure	1.5 / 1.7	250 / 300 ml/min	2 bar / 2.5 bar	L	Airless / Air Assisted Airless	25 - 31 Thou
	SATAgel 1000 B RP	Gravity	1.8 / 2.5	n/a	1.8 bar / 2 bar	S		
	SATAgel 1000 K RP	Pressure	1.5 / 2.1	270 - 380 ml/min	1.8 / 2 bar	S		
International Intersprime 450	SATAgel 1000K RP	Pressure	1.5 / 2.0	280 - 380 ml/min	1.8 / 2 bar	S	Airless / Air Assisted Airless	26 - 31 Thou

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IWATA SPRAY GUN SET-UPS

Equipment Product	Spray Gun	Type	Air Cap	Tip Size	Fluid Flow	Atomizing Pressure (@ handle Except where noted)	Pump Pressure	Fluid Pressure	Pump / Ratio
Hul Guard Extra	W 300	Pressure	K2	1.6	300 ml/min	3 Bar			
	MSGS 250 S	AAA	HVLP	11 / 13 Thou		6 Bar (at Pump)	6 Bar	180 Bar (2610 psi)	ICON 233 / 30:1
Ultra Build	W 200	Pressure	K2	1.6	350 ml/min	1.7 Bar			
	W400 - BA	Gravity	O2	1.8		2 Bar			
High Build	W 200	Pressure	O2P	1.6	400 ml/min	3 Bar			
	W 400 - BA	Gravity	O2	1.8		2.25 Bar			
Epoxy Surfacing Primer	W 200	Pressure	U2	1.4	380 ml/min	2.75 Bar			
	W 400 - BA	Gravity	O2	1.8		3.0 Bar			
Quick Build Sealer	WS 200	Pressure	O1	1	300 ml/min	2.5 Bar			
	W400 - BA	Gravity	O2	1.3		2 Bar			
Quick Build Surfacer	WS 200	Pressure	O1	1	200 ml/min	2.5 Bar			
	W 400 - BA	Gravity	O2	1.3 / 1.4		2 Bar			
Awkquick	WS 300 - FT	Pressure	O1	1	380 ml/min	3 Bar			
	W 400 - BA	Gravity	O2	1.4		2 Bar			
S4S Primer	WS 200 - FT	Pressure	O1	1	300 ml/min	2.5 Bar			
	WS 400	Gravity	O1	1.2 HD		2 Bar			
Awkrip HDT	MSGS 250 S	AAA	HVLP	940		4.5 Bar (at pump)	5.2 Bar	156 Bar (2262 psi)	ICON 233 / 30:1
	WS 200 SP	Pressure	O1	1	300 ml/min	2.5 Bar			
Awkcraft 3000 / Awkcraft 2000	WS 400	Gravity	O1	1.2 HD		2 Bar			
	WS 200 SP	Pressure	O1	1	250 ml/min	2.5 Bar			
Awkcraft SE (Solids and Effects)	WS 200 SP	Pressure	O1	1	250 ml/min	2.5 Bar			
	WS 400	Gravity	O1	1.2 HD		2 Bar			
Awkrip Topcoat (G / H Product Line)	WS 200 SP	Pressure	O1	1	250 / 300 ml/min	2.5 Bar			
	WS 400	Gravity	O1	1.2 HD		2 Bar			
International Perfection Pro Topcoat	MSGS 250 S	AAA	HVLP	940		2.5 Bar	2 Bar	80 Bar (870 psi)	ICON 233 / 30:1
	WS 200 SP	Pressure	O1	1	250 / 300 ml/min	2.5 Bar			
International Perfection Pro Undercoat	WS 300	Pressure	O1	1	300 ml/min	2.5 Bar			
	W 400 - BA	Gravity	O2	1.3		2 Bar			
International Interior Finish 750	WS 200 SP	Pressure	O1	1	200 ml/min	2.5 Bar			
	WS 400	Gravity	O1	1.2 HD		2 Bar			
International / Metallux Interior Finish 770	WS 200 SP	Pressure	O1	1	200 ml/min	2.5 Bar			
	WS 400	Gravity	O1	1.2 HD		2 Bar			

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AIRLESS EQUIPMENT

Traditionally used with Awlgrip products that have high viscosity, please refer to the data table section of the Application Guide. Although not the preferred application method, it is possible to use air-assisted airless equipment for low to mid viscosity products.

AIR ATOMIZED

For use with Awlgrip products that have low to mid viscosity, please refer to the product data table section of the Application Guide.

HIGH VOLUME LOW PRESSURE (HVLP) GUNS

Due to the low atomizing power, the use of HVLP equipment can impact the way a coating behaves, having an effect on final finish. Please contact your local Awlgrip representative and gun manufacturer to arrange a consultation.

When consulting the spray gun set-up table, please make note of the points below:

1. Gun air pressures are measured at handle with trigger pulled.
2. Some Fluid Needles listed are suitable for use with more than one size fluid nozzle.
3. Maximum fluid nozzle size available for this gun model.
4. When using paint pressure pots, ensure the fluid delivery lines are the correct grade (solvent resistance) for the paints and solvents being used. For further details, please consult your equipment provider or manufacturer.

APPLICATION EQUIPMENT

BRUSHES AND ROLLERS

Use brushes and rollers which are specified for use with urethanes and epoxies. Household types will 'melt' because of their lack of solvent resistance.

PAINTING ENVIRONMENT

Awlgrip Urethane Topcoats require three cure cycles.

First Cure Cycle: This cycle requires 24 hours at the standard conditions of 25°C / 77°F, 50% R.H. Masking tape can be applied for boot lines and striping. Remove masking tape immediately after application.

Second Cure Cycle: The second cure requires 72–96 hours at 25°C / 77°F, 50% R.H. During this stage the film becomes much harder. Abrasion and chemical resistance develop.

Third Cure Cycle: This third cycle requires 14–21 days at 25°C / 77°F, 50% R.H. During this time the coating develops all its physical properties. The casual observer may not be able to determine a significant difference between Cycle 2 and Cycle 3. However, the cure is not complete during Cycle 2.

These cure calculations are based on exposure at standard conditions (25°C / 77°F, 50% R.H.), and with coatings applied at the recommended film thickness.

CAUTION:

Cure rates are subject to many variables. These include, but are not limited to: ambient temperature, substrate temperature, relative humidity, applied film thickness, reducer selection, use of accelerators, retarders and airflow. Temperatures warmer than the standard conditions of 25°C / 77°F, 50% R.H. will speed dry and cure times. Cooler temperatures will create slower dry and cure times.

In colder climates it is important to remember that recoat times specified at 25°C / 77°F will double every 3°C / 5°F the temperature is below 25°C / 77°F. Below 12°C / 55°F the curing process stops.

Do not apply paint materials to surfaces less than 3°C / 5°F above dew point, or to surfaces warmer than 41°C / 105°F. Ambient temperature should be minimum 13°C / 55°F and maximum 41°C / 105°F.

Moisture Complications

Moisture on the surface can be disastrous. Problems are noticeable when moisture comes in contact with the Awlgrip topcoat or wood finish before they complete the first stage of curing.

Results can be but are not limited to:

- overall loss of gloss and image
- flat spots
- a rough or grainy surface
- blistering
- waterspotting

These problems can also occur as a result of over-coating a primed surface that has not adequately cured, or applying the topcoat to a surface that is contaminated with moisture.

Avoid applying topcoats in situations where rain, dew, fog or other condensation can contact the paint surface before the coating has completed the first stage of cure.

Condensation occurs when the air becomes completely saturated with moisture and the temperature drops below the dew point. At standard conditions (25°C / 77°F, 50% R.H.), avoid applying topcoats when the temperature could drop below the dew point within 6–8 hours after the application.

AWLGRIP®

PRODUCT DATA TABLES



AkzoNobel

PRIMERS

	Wash Primer CF	Max Cor CF	Hullguard Extra	Ultra Build	High Build	Epoxy Surfacing Primer	Airpak	S45 Epoxy Primer	Quick Build Sealer	Quick Build (EU/AF)	Quick Build Surface (NA)
	(OD860 / OD350)	(OR430 / OR330)	(OD150 / OD370)	(OD360 / OD318)	OD8002 or OD9002 / OD3002	(OD1030 / OD3050)	(OD8003 / OD9001)	(OD8001 & OD1001 / OD3001)	(OU8000, OU9000, OU7000, OU9000 / OU4200 / OA3110)	(OU8000, OU9000, OU7000, OU9000 / OU4200 / OA4210)	(OU8000, OU9000, OU7000, OU9000 / OU4200 / OA3210)
Attributes	Chromate-Free Etch Primer	Chromate-Free Epoxy Primer	Epoxy Substrate Primer	Epoxy Surfacing Primer	Epoxy Surfacing Primer	Epoxy Surfacing Primer	Epoxy Undercoat Primer	Epoxy Undercoat Primer	General Purpose Undercoat Primer	Undercoat Urethane Primer	Undercoat Urethane Primer
Product Features	Chromate-free etch primer that incorporates Controlled Fusion (CF) technology to give excellent adhesion to stainless steel and anodized aluminum. Controlled Fusion also allows extended recoat times, the need for sanding before applying this next coat. Can be overcoated directly with S45 Epoxy Primer or Awripig finishes. For above waterline use only.	Max. Cor CF is a two-component high solid epoxy primer, tailored to provide adhesion with excellent chemical and solvent resistance. A chromate-free also product with immediate recoat times. Controlled Fusion (CF) technology for extended recoat times, improved substrate adhesion and reduced sanding. Contains anti-corrosive pigments to extend system longevity. Great adhesion to aluminum and steel. Must be directly overcoated with Hullguard Extra or High Build Epoxy Primer. For above waterline use only.	Hullguard Extra is an epoxy holding primer, used for subsequent tarring. Offers superb adhesion to properly prepared steel, aluminum and zinc. Offers excellent re-coatability for aged surfaces. Excellent anti-corrosive properties. Provides the perfect base for application of waterborne primers. For use above and below the waterline.	Ultra Build Epoxy Primer is a two-component epoxy primer/sealer used where high build and filling is required above the waterline. Combines excellent build capacity and resistance to print through. For above waterline use only.	High Build Epoxy Primer is a two-component epoxy surface for use where high build and filling is required. Ideal for use over Awripig primers and tannings compounds. May be applied directly to properly prepared wood or galcoat. Not to be used below the waterline.	Epoxy Surfacing Primer is a specialized two-component epoxy primer used for high filling. Designed for use as an intermediate primer as part of filler systems above the waterline, and tailored for specific application for direct use over approved surfacing fillers. Not to be used below the waterline.	A quick drying, medium build, easily sanded, two-component epoxy primer / surface. Easy to apply by brush, roller or spray. Can be overcoated directly with S45 Epoxy Primer or Awripig finishes. Not to be used below the waterline.	S45 Epoxy Primer is a multi-use, corrosion-resistant epoxy primer used to seal undercoats and surfacing primers before applying finishes. Can be applied both above and below the waterline on a wide range of substrates, via spray or brush methods. Dual purpose: seal both undercoat and surfacing primers in a single product. Use Awripig protection, increasing the longevity of your system. Excellent adhesion to all substrates.	Quick Build Sealer is a high performance yacht priming system, formulated to provide a quick and convenient application. Using just six colored bases, Quick Build can closely match any finish, reducing the number of stages required to produce outstanding results. Easy application system for preparation and application in a single product. Use Awripig protection, increasing the longevity of your system. Excellent adhesion to all substrates.	Quick Build Surface is a versatile three-component fast drying polyurethane primer for use in a quick and sanded system while maintaining an outstanding Awripig finish. Using just six colored bases, Quick Build can closely match any finish, reducing the number of stages required to produce outstanding results. Easy application system for preparation and application in a single day. Can be applied directly to Awripig primers or galcoat in far to good condition.	Quick Build Surface is a versatile three-component fast drying polyurethane primer for use in a quick and sanded system while maintaining an outstanding Awripig finish. Using just six colored bases, Quick Build can closely match any finish, reducing the number of stages required to produce outstanding results. Easy application system for preparation and application in a single day. Can be applied directly to Awripig primers or galcoat in far to good condition.
Mixed Color	Yellow	Green	White	White	Off-White and Skips	Off-White	Off-White	Off-White and Grey	White, Black, Skis, Green, Red, Yellow	White, Black, Skis, Green, Red, Yellow	White, Black, Skis, Green, Red, Yellow
Density (Un-thinned)	1.02	1.2	1.37	1.42	1.99	1.66	1.49	1.25	1.36	1.37	1.36
Volume Solids %	33	58	46	85	58	83	40	38	40	38	38
Mixed VOC (g/l) - unthinned	780	378	468	260	350	401	399	518	543	550	550
Suitable Substrates	Anodized Aluminum, Aluminum, Stainless Steel, Steel	Aluminum, Steel	Anodized Aluminum, Aluminum, Stainless Steel, Steel, GPF, Galcoat, Wood	Galcoat, Awripig Primers, Awripig Fillers	Galcoat, Wood, Awripig Primers, Awripig Fillers, Previously Painted Surfaces	Galcoat, Awripig Primers, Awripig Fillers	Galcoat, Wood, Awripig Primers	Aluminum, Steel, Galcoat, Wood, Awripig Primers, Awripig Fillers, Previously Painted Surfaces	Aluminum, Galcoat, Awripig Primers, Previously Painted Surfaces	Galcoat, Awripig Primers, Awripig Fillers, Previously Painted Surfaces	Galcoat, Awripig Primers, Awripig Fillers, Previously Painted Surfaces
Application Area	Above Waterline	Above Waterline	Above and Below Waterline	Above Waterline	Above Waterline	Above Waterline	Above Waterline	Above and Below Waterline	Above Waterline	Above Waterline	Above Waterline
Application Method	Spray	Spray	Spray / Consult TDS for Brush / Roll	Spray	Spray / Brush / Roll	Spray	Spray / Brush / Roll	Spray / Brush / Roll	Spray	Spray	Spray
Requires primer (undercoat) – above water	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Requires iso-coat or primer (undercoat) – below water	N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Application											
Number of coats	1	1	1 Spray Applied / 2 Brush / Roller	1	2 +	2	1+	2 +	1	3	3
Recommended WFT: Per Coat	100µm / 4mils	45µm / 1.8mils	217µm / 8.5mils	700µm / 28mils	212µm / 8.3mils	225µm / 8.9mils	125µm / 5 mils	87µm / 3.4mils	75µm / 3 mils	100µm / 4mils	100µm / 4mils
Recommended DFT: Total after Sanding	13µm / 0.5mils	25µm / 1 mils	425µm / 17mils	125µm / 5mils	95µm / 3.7mils	95µm / 3.7mils	50µm / 2mils	35µm / 1.4mils	30µm / 1.2mils	40µm / 1.2mils	40µm / 1.2mils
Dry Film Weight per typical coat (g / m²)	N/A	N/A	85µm / 3.4mils	375µm / 15mils	225µm / 9mils	150µm / 6mils	35µm / 1.4mils	75µm / 3mils	N/A	120-140µm / 4.8-5.6mils	120-140µm / 4.8-5.6mils
Dry Film Weight per typical coat (g / yd²)	22 @1.5 mils	37 @0.5 mils	156 @100 mils/mils	731 @425 mils	347 @125 mils	227 @95 mils	104 @50 mils	91 @50 mils	64 @30 mils	87 @40 mils	87 @40 mils
Mix Ratio (By Volume)	1:1 with OD3000	2:1 with OD3300	10:1.5 with OD3730	1:1 with OD3018	1:1 with OD3002	1:1 with OD3050	1:1 with OD0001	1:1 with OD3001	4:1-1:5 with OU5100 and OU4200	3:1-0.4 with OU4200 and OU4200	3:1-1 with OU5200 and OU5010
Thinners / Reducers	Do Not Reduce / Thin	Do Not Reduce / Thin	OT0006 - Spray	OT0073	OT0006 - Spray OT0176 - Brush/Roller	OT0006 - Spray	OT0006 - Spray OT0001 - Brush/Roller	OT0006 - Spray OT0001 - Brush/Roller	OT0001 - Spray OT0001 - Brush/Roller	OT0001 - Spray OT0002 / OT0003 / OT0005	OT0001 - Spray OT0002 / OT0003 / OT0005
Max Thinning	N/A	N/A	Up to 15%	5 - 25%	10 - 20%	Up to 20%	Up to 25%	Up to 25%	Up to 25% Spray 5 - 10% Brush / Roll	5 - 10% Optional	5 - 10% Optional
Equipment Cleaning	OT0006	OT0006	OT0006	OT0073	OT0006	OT0006	OT0006	OT0006	OT0006	OT0002	OT0002
Isolation Time	No isolation	No isolation	No isolation	15 minutes	15 minutes	15 minutes	15 minutes	15 minutes	None	None	None
Pot-Life (82°F C)	8 hours	2 hours	8 hours	8 hours	8 hours	6 hours	8 hours	16 hours	5 hours	1.5 hours	2 hours
Min Time to Sand (82°F C)	N/A	N/A	24 hours	16 hours	12 hours	8 hours	16 hours	16 hours	N/A	1.5 hours	2 hours
Min Overcoating Time (82°F C) – with itself or other primers	N/A	17 hours with other primers. Do not overcoat with itself.	16 hours	1 hour (self)	2 hours (self) 12 hours (other primer)	2 hours (self) 12 hours (other primer)	4 hours	1 hours (self) 12 hours (other primer)	N/A	5-15 minutes (self/saft)	5-15 minutes (self/saft)
Max Overcoating Time (82°F C) – with filler	N/A	72 hours with other primers. Do not overcoat with itself.	6 months	24 hours	24 hours	5 days	24 hours	24 hours (other primers)	N/A	7 days	7 days
Min Overcoating Time (82°F C) – with filler	N/A	N/A	16 hours	12 hours	12 hours	18 hours	N/A	N/A	N/A	N/A	N/A
Max Overcoating Time (82°F C) – with filler	N/A	N/A	6 months	24 hours	24 hours	5 days	N/A	N/A	N/A	N/A	N/A
Min Overcoating Time (82°F C) – primer/finish (undercoat)	1 hour	N/A	16 hours	12 hours (other primers)	12 hours (other primers)	18 hours	12 hours	1 hours (self) 12 hours (other primers)	N/A	N/A	N/A
Max Overcoating Time (82°F C) – primer/finish (undercoat)	6 months	N/A	6 months	24 hours (other primer)	24 hours (other primer)	5 days	24 hours	24 hours	N/A	N/A	N/A
Min Overcoating Time (82°F C) – with topcoat	1 hour	N/A	N/A	N/A	N/A	N/A	12 hours	12 hours	15 minutes	1.5 hours	3 hours
Max Overcoating Time (82°F C) – with topcoat	6 months	N/A	N/A	N/A	N/A	N/A	24 hours	24 hours	24 hours	7 days	7 days

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FILLERS

	Awfilair LW	Awfilair LW Fast	Awfilair Pumpable	Awfilair FL	Awfilair SF	Awlgrip Surfacing Filler	Aerowave 2501
	(OD8200 / OD7200)	(OD8200 / OD7222)	(OP7085 / OP7088)	(OD8300 / OD7300)	(OD8500 / OD7500)	(OD8200 / OD3200)	(OA1801 / OA1802)
Attributes	Profiling Filler	Profiling Filler	Profiling Filler	Profiling Filler	Sprayable Profiling Filler	Surfacing Filler	Spot Filler
Product Features	Awfilair LW Standard is a premium two-part epoxy filler, which acts as a fairing compound for the smoothing of irregular surfaces. Allows the creation of a level, even surface which reduces drag and improves the boat's appearance. Awfilair LW Standard can be applied above and below the waterline.	Awfilair LW Fast is a premium two-part epoxy filler, which acts as a fairing compound for the smoothing of irregular surfaces. Allows the creation of a level, even surface which reduces drag and improves the boat's appearance. Awfilair LW Fast may be sanded sooner than Awfilair LW Standard. Can be applied above and below the waterline.	Awfilair Pumpable is a two-part epoxy filler, which acts as a fairing compound for the smoothing of irregular surfaces. Suitable for both manual and automatic mixing. Can be applied above and below the waterline.	Awfilair FL (Flex-Lite) is a light weight profiling filler that has best-in-class mechanical performance and flexibility, able to withstand the high levels of stress and strain resulting from the increased vessel size and design complexity. Application by trowel at very high film thickness possible. Can be applied above and below the waterline.	Awfilair SF (Spray Filler) is a high performing, solvent-free filler which is applied by pressurized airless spray. Improves both the speed and final quality of the fairing application process. For fairing, leveling or smoothing irregular surfaces. Wet on wet applications, up to 2 coats a day. Can be applied above and below the waterline.	Awlgrip Surfacing Filler is a non-shrinking filler for use above the waterline, tailored for use over all Awfilair LW films. Used to fill sand scratches, pinholes and surface imperfections. Gives a smooth finish prior to applying the sealer, high build or finish primer. Excellent solvent resistance. Can be applied above and below the waterline.	Aerowave 2501 is a non-shrinking repair filler for use above the waterline, tailored for use on pinholes, scratches and small imperfections. Easy to apply and sand with a fast curing time. Do not use below the waterline.
Mixed Color	Pink / Red	Pink/ Red	Pink / Red	Pink / Red	Blue	Cream	Brown
Density (manual mixing)	0.91	0.92	0.90	0.68	0.74	1.64	1.59
Fiber Reinforcement	No	No	No	Yes	No	No	No
Approved for mixing machine	Yes	Yes	Yes	Yes	Yes	N/A	N/A
Application Methods	Manual / Trowel	Manual / Trowel	Manual / Trowel	Manual / Trowel	Plural Field Spray / Manual / Trowel	Manual / Trowel	Manual / Trowel
Suitable Substrate	Suitable Awlgrip Epoxy Primer	Suitable Awlgrip Epoxy Primer	Suitable Awlgrip Epoxy Primer	Suitable Awlgrip Epoxy Primer	Suitable Awlgrip Epoxy Primer	Suitable Awlgrip Epoxy Primer	Suitable Awlgrip Epoxy Primer
Typical Hardness (Shore D when fully cured)	60 ±5	65 ±5	65 ±5	60 ±5	70 ±5	N/A	N/A
Sanding before Overcoating	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Requires Surfacing Filler	optional	optional	optional	Yes	optional	N/A	N/A
Compressive Strength (MPa)	47	47	37	20.2	30.7	N/A	N/A
Flexural Strength (MPa)	36	36	39	25.1	36.8	N/A	N/A
Tensile Strength (MPa)	20	20	21	13.5	17.44	N/A	N/A
Application							
Mix Ratio (By Volume)	1:1 with OD7200	1:1 with OD7222	1:1 with OP7086	1:1 with OD7300	1:10:1 with OD7500	2:1 with OD3200	1:1 with OA1802
Mix Ratio (By Weight)	1.59:1 with OD7200	1.56:1 with OD7222	1.59:1 with OP7087	1.26:1 with OD7300	1.20:1 with OD7500	2.37:1 with OD3200	N/A
Equipment Cleaning	OT0006	OT0006	OT0006	OT0006	GTA803	OT0006	OT0002 or OT0006
Typical Application Thickness Per Coat (mm)	5-6mm (8000 µm / 240 mils)	5-6mm (8000 µm / 240 mils)	6mm (8000 µm / 240 mils)	5-6mm (8000 µm / 240 mils)	6mm (8000 µm / 240 mils)	0.1mm (100µm / 4 mils)	N/A
Maximum Application Thickness Per coat (mm)	10mm (10000µm / 400 mils)	10mm (10000µm / 400 mils)	10mm (10000µm / 400 mils)	20mm (20000 µm / 800 mils)	10mm (10000 µm / 400 mils)	0.1mm (100µm / 4 mils)	N/A
Number of Coats	Multiple Coats	Multiple Coats	Multiple Coats	Multiple Coats	Multiple Coats	Multiple Coats	Multiple Coats
Dry Film Weight (g / m²) per typical coat	5130 @6000 µm	4968 @6000 µm	5366 @6000 µm	3760 @6000 µm	4630 @6000 µm	172 @100 µm	N/A
Dry Film Weight (g / ft²) per typical coat	478.9 @240 mils	462 @240 mils	499 @240 mils	349.5 @240 mils	430.3 @240 mils	16 @4 mils	N/A
Induction Time	None	None	None	None	None	None	None
Pot-life (825°C / 77°F)	90 minutes	30 minutes	90 minutes	45 minutes	75 minutes (manual mixing)	25 minutes	10 minutes
Min Time to Sand (825°C / 77°F)	17 hours	6 Hours	24 hours	19 hours	16 hours	6 Hours	60 minutes
Requires Sanding before overcoating with itself or primer	Yes	Yes	Yes	Yes	May be applied wet on wet over itself. Requires sanding when self overcoating or when overcoating with primer.	Yes	Yes
Min Overcoating Time (825°C / 77°F) – with itself or surfacing filler	17 hours	6 Hours	24 hours	19 hours	30 minutes (self)	6 Hours	60 minutes
Min Overcoating Time (825°C / 77°F) – with primer	17 hours	6 Hours	24 hours	48 Hours	16 Hours	6 Hours	60 minutes

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TOPCOATS

	Awlgrip HDT Colors	Awlgrip HDT Clear	Awlgrip 3000 Colors	Awlgrip 3000 Clear	Awlgrip 2000 Colors	Awlgrip 2000 Clear	Awlgrip SE Basecoats	Awlgrip Topcoat Colors	Awlgrip CS (Mat)	Awlgrip 2000 VOC Compliant	Awlgrip Topcoat Series (NAM Only)
Attributes	OC Series	OC3000	TF Series	TF3000	OF Series	OF3029	OE / OP / OL / OS Series	OQ / OH Series	OJ3000 / OJ01	OF Series (NAM Only)	OC / OF Series (NAM Only)
Polyurethane Topcoat											
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VARNISH

	Awlsep Varnish	Awlbrite Clear Gloss	Awlwood Primers	Awlwood Clear	Awlwood Multi-Climate Gloss	Awlwood Satin Matt
Attributes	OM3131	OJ3005 / OJ3006 / OM3031 / OM3001 / OA0006	OJ3809 - Clear / OJ3809 - Yellow / OJ7809 - Red	OJ3890	OJ400	OJ3810
	Tung Oil Spar Varnish	Polyurethane Clearcoat	Base Coat for Awlwood Gloss	Clear Gloss Varnish	Clear Gloss Varnish	Clear Satin Matt Varnish Topcoat
Product Features	Awlsep is a classic phenolic tung oil varnish with a rich color and deep gloss that is used for brightwork, providing protection against water and weather. Awlsep Varnish is fast drying and recoatable for quick and flexible Clear application. Awlsep Varnish may be used as a stand alone varnish or as a basecoat for Awlbrite Clear Varnish. For use above the waterline only.	Awlbrite Clear is a buffable, high build, three component acrylic urethane wood finish. Awlbrite Clear is used to create a more durable and fast curing brightwork system compared to a traditional varnish. Do not apply Awlbrite Clear directly to bare wood. Must be applied over Awlsep Varnish. For use above the waterline only.	Awlwood Primers are designed for exterior application above the waterline and direct to bare wood. Awlwood Primer is part of a high-performing Primer and Clear Finish system that adheres directly to wood. As natural timber color fades, colored / tinted primers may be used to help establish a permanent rich base color. Developed to deeply permeate the grain of the wood, giving long-lasting color stability, improves system flexibility, adhesion and durability. Can be applied in a wide range of temperatures and humidities. Must be overcoated with Awlwood Clear Gloss or Awlwood Multi-Climate Gloss. For use above the waterline only.	Awlwood Clear Gloss is a 1-pack clear varnish, designed for exterior application above the waterline. Must be applied over Awlwood Primers when used on bare wood. Awlwood Clear Gloss forms a fast-curing system with great flow and high abrasion resistance that is both buffable and repairable. Best-in-class gloss retention for a great lasting appearance. Exceptional abrasion resistance, perfect for cleaving rails and deck furniture. Fast curing, allowing for multiple applications per day. For use above the waterline only.	Awlwood Multi-Climate Gloss is a clear solution for application above the waterline specifically designed for applications in a wide range of temperatures and humidities, especially tropical climates. This product is part of a high-performing system that adheres directly to wood, must be applied over Awlwood Primers. Achieving in-service performance and durability with exceptional gloss retention. Excellent flow and distribution of image (DOI) giving it the ultimate mirror finish. For use above the waterline only.	Awlwood Satin Matt is a 1-pack varnish, formulated to create a visually appealing satin matt finish. Awlwood Satin Matt is part of a fast-curing system allowing for multiple applications per day. The Awlwood Satin Matt provides amazing in-service performance and durability with a highly abrasion resistant surface. Awlwood Satin Matt is typically applied as first coat over the Awlwood Gloss system, where a Satin Matt finish is desired. For use above the waterline only.
Expected Gloss (GU)	88 - 90	89-92	N/A	89 - 92	89 - 92	20 - 40
Finish	High Gloss	High Gloss	N/A	High Gloss	High Gloss	Low Gloss
Color	Amber	Clear	Clear / Yellow / Red	Clear	Clear	Clear
Repairable	No	Yes	N/A	Yes	Yes	No
Buffable & Polishable	No	Yes	N/A	Yes	Yes	No
VOC (g/l)	406	206	500	487	490	742
Application						
Number of coats	7-10	8 - 12	1	8+	8+	1 (Over Awlwood Gloss System)
Recommended WFT: Per Coat	50-75µm / 2-3 mils	50-60µm / 2-2.5mils	100µm / 4 mils	80µm / 3.1 mils	80µm / 3.1 mils	80µm / 3.1 mils
Recommended DFT: Per Coat	25-38µm / 1-1.5 mils	25-30µm / 1-1.2 mils	45µm / 1.8mils	36-45µm / 1.4-1.8mils	36-45µm / 1.4-1.8mils	25µm / 1mils
DFT: Acceptable Range	175 - 260µm / 7 - 10.3 mils	250-300µm / 10-14mils	45µm / 1.8mils	288 - 360µm / 11.2 - 14.4mils	288 - 360µm / 11.2 - 14.4mils	29-35µm / 0.8-0.9mils (Over Awlwood Gloss system)
Mix Ratio	Single Component	2:1:0.5 with J3006 + AD031 (Brush) or AD001 or AD006 (Spar)	Single Component	Single Component	Single Component	Single Component
Thinners / Reducers	OT0016 Brush / Roller	Do Not Add Additional Thinners	Do Not Thin	OT0200 Brush / OT0200 Spray	OT0200 Brush / OT0200 Spray	Do Not Thin
Max Thinning	See Product Datasheet	N/A	N/A	10%	10%	N/A
Equipment Cleaning	OT0001 / OT0002 / OT0003	OT0001 / OT0002 / OT0003	OT0200 Brush Cleaner	OT0200 Brush Cleaner	OT0200 Brush Cleaner	OT0200 Brush Cleaner
Application Methods	Spray / Brush / Roll	Brush / Spray	Brush / Roll	Brush / Spray	Brush / Spray	Brush / Spray
Induction Time	No Induction	No Induction	No Induction	No Induction	No Induction	No Induction
Put-Abs (®25°C / 77°F)	N/A	1 - 2 hours	20 minutes	20 minutes	20 minutes	30 minutes
Touch Dry (®25°C / 77°F)	3 - 4 hours	3 hours	4 hours	2 hours	4 hours	2 hours
Hard Dry (®25°C / 77°F)	24 hours	12 hours	18 hours	24 hours	24 hours	24 hours
Min Overcoating Time (®25°C / 77°F) - with Itself / Gloss Coat	3 hours	3 hours	4 hours with Awlwood Clear or Multi-Climate	2 hours (with Itself) 12 Hours - with Awlwood Satin Matt	4 hours (with Itself) 12 Hours - with Awlwood Satin Matt	N/A
Max Overcoating Time (®25°C / 77°F) - with Itself / Gloss Coat	36 hours	36 hours	8 hours with Awlwood Clear or Multi-Climate	24 hours (with Itself)	24 hours (with Itself)	N/A

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SOLVENTS/CLEANERS

	Awprep Surface Cleaner	Awprep Plus	Awprep 400	Surface Cleaner	Interlux Fiberglass Surface Prep	Interlux Fiberglass Solvent Wash	International 600 Wipe Down Solvent	International Super Cleaner
	OT0008	OT0115	OT0170	OT0340	YMA601V	Y202	ITA075	YMB820
Attributes	Surface Cleaner	Wax and Grease Remover	Slow Wipe Down Solvent	General Purpose Wipe Down Solvent	Mold Release Agent Cleaner	Composite Wipedown Solvent	Wipe Down Solvent	Detergent for removal of Waxes and Oils
Product Features	Awprep Surface Cleaner is a fast evaporating surface cleaner used to wipe down final primed or topcoated surfaces before and after sanding. Awprep is a mild surface cleaner that will remove hand oils, light grease, and other light surface contaminants. Using the "Two Cloth Method" wipe down with Awprep before and after sanding of primers, fillers, and topcoats. Awprep has a "drying" effect which removes latent moisture from the surface. Latent moisture on the surface can cause a gloss finish to come out flat. Awprep OT0008 is non-photochemically reactive.	Awprep Plus is a medium fast evaporating, strong, solvent designed to remove waxes, oils, and greases commonly found on painted surfaces, new or aged gelcoat, aluminum, or steel. Always de-wax before sanding. Use before and after sanding the substrate prior to priming. Use the "Two Cloth Method" to apply and remove Awprep Plus. Do not use Awprep Plus OT0115 on freshly applied primers or topcoats. Awprep Plus OT0115 is photochemically reactive.	Awprep 400 is a general purpose surface cleaner which evaporates five times slower than Awprep OT0008. Use to wipe down final primed or topcoated surfaces before and after sanding. Awprep 400 will remove hand oils, light grease and other light surface contaminants. Use the "Two Cloth Method" to apply and remove the Awprep 400. The slower evaporation rate allows for larger areas to be cleaned in hot weather using the "Two Cloth Method" without creating wipe marks. Awprep 400 is also excellent for removing tape residue. It is recommended to use Awprep 400 in warm weather.	Awprep Surface Cleaner is used as a general purpose surface cleaner, ideal for wiping down substrates, fresh primers and topcoats before and after sanding. Use the "Two Cloth Method" to apply and remove the Surface Cleaner OT0340. Suitable for a wide range of surfaces and applications. Part of an ideal sanding process.	Interlux Fiberglass Surface Prep YMA601V is a low VOC, water-based, cleaner that emulsifies and lifts mold release agents and other contamination from the surface of fiberglass gelcoats so that it can be removed with clean, fresh water. Fiberglass Surface Prep can also be used on previously painted or varnished surfaces when preparing to repaint.	Interlux Fiberglass Solvent Wash Y202 removes mold release agents, wax, oil and grease from hulls of bare fiberglass boats. It is also effective in removing wax and silicone contamination from painted hull surfaces that are being prepared for repainting. It is essential to use Fiberglass Solvent Wash Y202 prior to painting fiberglass gelcoats, regardless of their age. Fiberglass Solvent Wash Y202 is an effective brush cleaner.	International 600 Wipe Down Solvent is a professional wipe down solvent designed to remove surface contamination such as waxes, oils, and sanding residue prior to sanding, surface preparation or paint applications.	International Super Cleaner is a highly concentrated cleaner. Removes wax, oil and contamination effectively. Degreases and cleans with no damage to gelcoat or paintwork. Suitable for hand and high pressure machine washing.
Market Availability	Globally Available	North America and Asia Pacific	North America and Asia Pacific	Europe, Middle East and Africa	North America Only	North America Only	Europe, Middle East and Africa	Europe, Middle East and Africa
Pre-Prep Wash Down / Wipe Down	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pre-Topcoat Surface Wipedown	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Wax / Mold Release Removal	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Silicon Removal	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
VOC (g/l)	800	817	769	750	325	868	744	0

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REDUCERS

	Reducer Fast Spray	Reducer Fast Spray	Reducer Standard Spray	Reducer Hot	Reducer OT0031 Brush	Epoxy Reducer Spray	Epoxy Reducer Ultra Build	Reducer Awlglap Varnish	Awlwood Spray Reducer	Awlwood Brush Reducer
	OT0001	OT0002	OT0003	OT0005	OT0031	OT0006	OT0073	OT0016	OT0002	OT0201
Attributes	Topcoat Spray Reducer	Topcoat Spray Reducer	Topcoat Spray Reducer	Topcoat Spray Reducer	Urethane Topcoat & Epoxy Primer Brush Reducer	Epoxy Primer Spray Reducer	Ultra Build Spray Reducer	Awlglap Varnish Brush Reducer	Awlwood Gloss Spray Reducer	Awlwood Gloss Brushing Reducer
Product Features	Use OT0001 in Awlglap Finishes Topcoats when application and cure temperatures are between 15-24°C (60-75°F). At 16-24°C (60-75°F), OT0001 will keep the paint film open for good flow but evaporate fast enough to provide adequate dry and dust-free times. OT0001 can also be used in conjunction with OT0005 at higher temperatures (5-32°C / 90°F) to combat solvent popping.	Use OT0002 in Awlglap Finishes when application and cure temperatures are between 13-21°C (55-70°F). OT0002 will keep the paint film open but evaporate fast enough to provide adequate dry and dust-free times. OT0002 is also an excellent gun and equipment cleaner. OT0002 can also be used in conjunction with OT0005 at higher temperatures (5-32°C / 90°F) to combat solvent popping. Use OT0002 as the reducer for topcoats finished with OC3015 Flattening Agent.	Use OT0003 in Awlglap Finishes when application and cure temperatures are between 21-32°C (70-90°F). OT0003 will keep the paint film open but evaporate fast enough to provide adequate dry and dust-free times. OT0003 can also be used in conjunction with OT0005 at higher temperatures (5-32°C / 90°F) to combat solvent popping.	Use OT0005 in Awlglap Finishes when application and cure temperatures are 32-41°C (90-105°F). OT0005 is most often used as an additive, blended with other spray reducers to improve flow. OT0005 is seldom the sole reducer. At lower temperatures (below 32°C / 90°F) OT0005 can be blended at any ratio with other Awlglap topcoat reducers to improve flow with these products or increase the evaporation rate of OT0005. OT0005 has a very slow evaporation rate, using OT0005 at temperatures above 24°C (75°F) may result in very long dry and tape times.	Use OT0031 in Awlglap Finishes, S4S Epoxy Primer, and Awlglap Sanding Surface in brush / roller applications. OT0031 evaporates very slowly, keeping the paint film open, maximizing flow and leveling while minimizing brush marks and roller dips. For Awlglap Topcoats, add OT0031 at 15-32% of the total volume of the mixed color base and converter. Application and cure temperatures between 15-32°C (60-90°F) produce the best results, with 21-29°C being the optimum. OT0031 is not recommended for use in spray applications, if a "welder" reducer is needed for spray application OT0005 should be used.	Standard epoxy primer reducer for epoxy application of S4S Epoxy Primer, Awlglap, Sparagelc Flaming Compound, High Build and Ultra Build Epoxy Primers. Also recommended for Hullguard Extra Epoxy Primer.	Special reducer for Ultra Build Primer (OC0008 / OC0018)	OT0016 is specially formulated as a brushing reducer for use in Awlglap varnishes. It should not be used in any urethane or epoxy coating.	Spray thinner / reducer for Awlwood Gloss and Awlwood Multi-Climate Gloss. Do not use with Awlwood Satin-Matt.	Brushing thinner / reducer for Awlwood Gloss and Awlwood Multi-Climate Gloss. Do not use with Awlwood Satin-Matt.
Market Availability	Globally Available	Globally Available	Globally Available	Globally Available	Globally Available	Globally Available	Globally Available	Globally Available	Globally Available	Globally Available
Typical Temperature Range	16 - 24°C / 60 - 75°F	13 - 21°C / 55 - 70°F	21 - 32°C / 70 - 90°F	32 - 41°C / 90 - 105°F	All	All	All	All	All	All
VOC (g/l)	888	806	930	975	940	853	836	782	865	873

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ANCILLARY PRODUCTS

	Airwash 2.0 and Airwash	Aircare	Griplex Fine	Griplex Coarse	Griplex Extra Coarse	Flattening Agent	X-98 Pro-Cure Accelerator	X-138 Pro-Cure Accelerator
	73235	73240	073012	073013	073237	G3013	73014	73015
Attributes	Cleaning Detergent for Awgrip Finishes	Protective Polymer Sealer for Awgrip Topcoats	Non Skid Additive	Non Skid Additive	Non Skid Additive	Topcoat Flattening Paste	Urethane Topcoat Accelerator	Urethane Topcoat Accelerator
Product Features	Formulated to clean Awgrip HDT, Awcraft 3000, Awcraft 2000, and Awgrip Topcoat. Airwash 2.0 (Europe and Asia Pacific) and Airwash (North America) does not contain acids, alkalis, or abrasives. It is free rinsing, which decreases drying time. Airwash 2.0 is not harmful to the Marine Environment as defined in Regulation (EC) No. 1272/2008 (CLP/GHS) and can be discharged in wash water within the provisions of MARPOL Annex V (Resolution MEPC.205(71)). Airwash contains no materials harmful to the Marine Environment as defined in Annex III of the Dangerous Substances Directive 67/548/EEC and can be discharged with wash water within the provisions of MARPOL Annex V (Resolution MEPC.205(71)).	Aircare is a protective polymer sealer formulated to protect and remove mild stains from Awgrip HDT, Awcraft 3000, Awcraft 2000, and Awgrip Topcoats. Aircare contains no harsh abrasives and will not scratch the painted surface. It leaves a non-yellowing, protective polymer coating which lasts through multiple washings. Aircare removes mild stains such as water spots and diesel soot, and increases resistance to attack from acid rain and other environmental pollutants with regular applications. Do not use Aircare on Awcraft CS.	Non-Skid is a polymer bead aggregate used to provide non-skid deck and step areas when mixed with any Awgrip topcoat. Fine Bead Size: 130µm Coarse Bead size: 300µm Extra Coarse Bead size: 240 - 300µm			Single component flattening agent reduces the gloss of Awcraft 3000, Awcraft 2000 and Awgrip Topcoat to a flat or semi-gloss finish. Do not use with Awgrip HDT or Awcraft CS. Not recommended for application to large expanses of surface as unequal gloss and appearance may result.	Pro-Cure X-98 is a specialized accelerator used to reduce dry and cure times for Awcraft 3000, Awcraft 2000, and Awgrip Topcoats. Pro-Cure X-138 may be used in both spray and brush applications. Do not use with Awgrip HDT.	Pro-Cure X-138 is a specialized inhibited accelerator used to decrease dry and cure times in Awcraft 3000, Awcraft 2000, and Awgrip Topcoats. Pro-Cure X-138 should not be used above 24°C / 75°F. For spray application only. Do not use with Awgrip HDT.
Market Availability	Global	Global	Global	Global	Global	Global	Global	Global
VOC (g/l)	0	230	N/A	N/A	N/A	502	888	951
APPLICATION	Wash surface while still wet from initial rinsing, using a soft, non-abrasive applicator when wetting the surface. Do not allow Airwash 2.0 or Airwash to dry on the surface prior to rinsing. Wash small sections of large surfaces to ensure the surface stays wet. Rinse thoroughly after wetting. When finished, wipe surface with soft cotton towel or cloths to prevent water spots. Water spots are caused by organic and inorganic impurities in the water. If water beads are allowed to air dry, the water evaporates and leaves a residue on the paint. If this residue is not removed it may gradually etch the paint.	Shake Aircare well and apply with a 100% cotton applicator or cloth. Do not apply Aircare with mechanical devices, spray by hand only. Aircare can be applied in sun or shade and can be applied to large areas before retreating. Allow Aircare to dry to a haze. Wipe off haze with a 100% clean, cotton cloth.	Application: Griplex Non Skid Polyresin may be added to mixed topcoats and applied by spray. The dry particles can also be broadcast or sprinkled into a tacky paint film. Mixing and Reduction: For spray application, add 8-10 oz. (227-284 grams) by weight of Griplex Non-Skid Particles to each gallon (3.785 l) of mixed color base and converter. Application Equipment: Use air atomized spray equipment recommended for Awgrip Topcoats. Flats to must be at least .070". Do not use aircare or air-assisted aircare spray equipment.			This product is an additive component. See instructions for the primary product. Please see product TDS for full details of mixing and matching ratios. Recommendations: Use reducer OT0003 to achieve optimum results at temperatures of 20°C / 68°F or higher.	Pro-Cure X-98 (73014) 1/2 liquid ounce per 2 gallons of mixed topcoat color base and converter. This is the maximum amount; lesser quantities may be sufficient. This is equivalent to 3 capsules if measured using the screw top cap. Pro-Cure X-98 should only be used in spray applications. Topcoats with a full ash of Pro-Cure X-98 may be recoated or taped in 4 to 8 hours at 25°C / 77°F.	Pro-Cure X-138 (73015) 1 liquid ounce per 2 gallons of mixed topcoat color base and converter. This is the maximum amount; lesser quantities may be sufficient. This is equivalent to 6 capsules if measured using the screw top cap. Awgrip Pro-Cure X-138 - If mixed at full amount, may be recoated or taped in 6 - 8 hours at 25°C / 77°F.

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US COMPLIANT PRODUCTS

	Aelcoat 5 VOC Compliant	Reducer Fast Spray VOC Compliant	Reducer Standard Spray VOC Compliant	Reducer Spray Hot VOC Compliant	Reducer Medium Spray VOC Compliant
Attributes	OG3039	OT0163	OT0167	OT0168	OT0176
	Topcoat Spray Converter	Topcoat Spray Reducer Fast	Topcoat Spray Reducer Standard	Topcoat Spray Reducer Slow	545 Epoxy Spray Reducer
Market Availability	US Only	US Only	US Only	US Only	US Only
Typical Temperature Range	N/A	16 - 24°C / 60 - 75°F	22 - 32°C / 70 - 90°F	32 - 41°C / 90 - 105°F	21 - 32°C / 70 - 90°F
VOC (g/l)	805	793	887	1041	1115

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AWLGRIP®

PRODUCT SANDING



AkzoNobel

SUBSTRATE PREPARATION: SANDING TABLE

Product Type	Products	Acceptable Subsequent Sanding Grade for Product Type	Methods	Role of Sanding
Substrate Primers	Wash Primer CP* Max Cor CF* Hullguard Extra** Quick Build Sealer**	Notes: * Indicates Do Not Sand ** Indicates Sanding not necessary in most applications	NA	NA
Profiling / Fillers / Fairing Compounds	Awlstar LW and LW Fast Awlstar FL (Flexite) Awlstar Pumpable Awlstar Spray Filler	P40 - P80 grit	Long board / Short board / DA / Orbital / Hand / Block	Flattening / Fairing
Surfacing / Fillers	Awlstar Surfacing Filler Aerowave 2501	P80 - P150 grit	Long board / Short board / DA / Orbital / Hand / Block	Flattening / Finish Fairing / Sand scratch and pinhole reduction
Surfacing / Build Primers	Ultra Build Epoxy Primer High Build Epoxy Primer Epoxy Surfacing Primer	P100 - P280 grit	Long board / Short board / DA / Orbital / Hand / Block	Finish Flattening / Sand scratch reduction
Undercoat Primers	545 Epoxy, Quick Build Surfacer Awlquick	P320 - P400 grit Optional additional 3M Scotch-pad	Short board / DA / Orbital / Hand / Block	Sand Scratch Reduction
Topcoat / Showcoat / Varnish layers	Awlgrip Topcoats	Topcoat to Topcoat P320 - P400 grit Optional additional 3M Scotch-pad	Short board / DA / Orbital / Hand / Block	Sand Scratch Reduction

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AWLGRIP

**SUBSTRATE
SCENARIOS
MASTER LIST**

AkzoNobel

VESSEL SUBSTRATES AND SUITABLE SUBSTRATE PRIMERS

Substrate	Suitable direct Awlgrip Primers
Direct to Aluminum (If no fairing required)	Wash Primer CF, Max Cor CF, Hulgard Extra, 545 Primer
Direct to Aluminum (If fairing required)	Max Cor CF, Hulgard Extra
Direct to Anodised Aluminum	Wash Primer CF, Hulgard Extra, Quick Build Sealer, 545 Primer
Direct to Steel / Stainless Steel (If no fairing required)	Wash Primer CF, Max Cor CF, Hulgard Extra, 545 Primer
Direct to Steel (If fairing required)	Max Cor CF, Hulgard Extra
Direct to Composite (Bare Laminate)	Hulgard Extra
Direct to Gelcoat (Good condition)	Hulgard Extra, Ultra Build, High Build Quick Build Sealer, Quick Build Surfacer, 545 Primer, Awlquik
Direct to Gelcoat (Fair condition)	Hulgard Extra, Ultra Build, High Build, Quick Build Surfacer, 545 Primer, Awlquik
Direct to Gelcoat (Poor condition)	Hulgard Extra, Ultra Build, High Build, Quick Builder Surfacer, Awlquik
Direct to Gelcoat (Fairing required)	Hulgard Extra, High Build
Previously Painted Surface (Good condition)	Hulgard Extra, Ultra Build, High Build, Quick Build Sealer, Quick Build Surfacer, 545 Primer, Awlquik
Previously Painted Surface (Poor or Fair condition)	Ultra Build, High Build, Quick Build Sealer, Quick Build Surfacer, 545 Primer
Previously Painted Surface (Poor condition)	Ultra Build, High Build, Quick Build Sealer, Quick Build Surfacer, 545 Primer
Previously Painted Surface (Fairing required)	Hulgard Extra, High Build
Epoxy Fillers / Fairing Compounds	Ultra Build, High Build, Epoxy Surfacing Primer
Timber (Solid Paint System)	Hulgard Extra, High Build, Awlquik, 545 Primer
Timber (Brightwork System)	Awlwood Primers, Awlpar

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AWLGRIP®

SURFACE PREPARATION ALUMINUM

These pages are designed to give the key guidance for correct surface preparation for each of the substrate scenarios identified on the previous page

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SURFACE PREPARATION: ALUMINUM

Aluminum: This section contains preparation methods for two types of aluminum surfaces:

1. Non-anodized aluminum – which may be faired or left un-faired.
2. Anodized aluminum – which may be in various grades. It is unacceptable to fill and fair over anodised surfaces.

In these situations correct aluminum surface preparation is critical. Removal of the oxidization, creating clean, bright, shiny aluminum with an appropriate profile will provide excellent performance. The key here is priming the surface immediately after completing the blasting, grinding or sanding before the aluminum can re-oxidize.

Preparation Notes:

- **Blasting:** Low pressure grit blast using aluminum oxide or an equivalent abrasive (not copper slag). If blast profile is particularly jagged, grind to remove “spikes”, providing a more uniform surface ensuring retention of specified profile.
- **Grinding:** Grind with P36 - P60 grit power disc to bright, clean aluminum. The metal must be bright silver and completely free of grey oxidation. Note: Power wire brushing is not permitted as it is ineffective and wires are often steel, leading to corrosion.
- **Chemical Pre-Treatment:** For further details on chemical treatments (i.e. conversion coating wipes, etc.) please consult your regional Technical Service Representative.
- **Sanding:** Anodizing - Breaking through the anodized layer and creating a good surface profile will promote optimal adhesion.
- **Timings:** Plan your preparation carefully. Always aim to apply substrate primer within 8 hours of the mechanical surface preparation. If the time to prime after blast is exceeded, follow up with a sweep blast or a clean up grind.
- **Priming:** Prime using an approved substrate primer as soon as possible (within 8 hours). For brush / roller applications, avoid using fluffy / lambswool type rolls as fibers will snag on the sharp profile – leading to wicking.

Cautions

Do not use rags to clean this surface after preparation. The sharp metal will snag fibers from the rags. These fibers can act as wicks for moisture or other contamination to enter the paint film. This can lead to premature failure of the Awlgrip Coating System.

SURFACE PREPARATION: ALUMINUM

Substrate Scenario	Step 1 - Clean	Step 2 - Degrease	Step 3 - Prepare	Step 4: Pre-Prime Clean	Step 5: Prime Substrate
Aluminum (No fairing required)	Thoroughly clean and degrease using detergents, steam cleaners or pressure washer. Be sure all detergent residues are rinsed from the surface. Follow with Awlgrip Degreaser (step 2).	Degrease using Awlgrip wipe down solvent. (See table for full details of appropriate cleaning solvents).	Sand P160 - P220 to ensure a surface profile is achieved.	Use a brush or broom if necessary. Vacuum heavy debris, grinding and sanding residue and any dust and dirt. Then blow off the surface thoroughly with clean, dry compressed air.	Prime using an approved substrate primer as soon as possible (within 8 hours). If 8 hours is exceeded, follow up with a sweep blast or a clean up grind. See application section for product and priming details.
Aluminum (Fairing Required)			Blast: Use aluminum oxide or other suitable media to obtain a surface profile of 50-75 microns / 2-3 mils. Grind: Use P36-P60 grit power disc to bright, clean aluminum to obtain a surface profile of 50-75 microns / 2-3 mils.		
Anodised Aluminum			Parts: Sand P80 - P120. Architectural Grade: Sand P40 - P80.		

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APPLICATION: TYPICAL PAINT SYSTEMS: ALUMINUM

Substrate	Direct Substrate Primer (Options)		Filling and Fairing (Options)	Intermediate Primer (Options)	Undercoat Primer (Options)	Topcoat (Options)
Aluminum	Aluminum (No fairing required)	System 1	Hullgard Extra	N/A	Ultra Build, High Build Epoxy Surfacing Primer	545 Epoxy Primer
		System 2	Max Cor CF + Hullgard Extra	N/A	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer
		System 3 Parts and Small Areas	Wash Primer CF	N/A	N/A	545 Epoxy Primer Quick Build Surfacer
		System 4	Quick Build Sealer	N/A	N/A	N/A
		System 5	545 Epoxy Primer	N/A	N/A	N/A
	Aluminum (Fairing Required)	System 6	Max Cor CF + Hullgard Extra	AwlSeal LW (Lts Weight) AwlSeal RL (Flowite) AwlSeal Surfacing Filler AwlSeal SF (Spray Filler) Epoxy Sprayable Fairing Compound	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer
		System 7	Hullgard Extra (only)			545 Epoxy Primer
	Anodised Aluminum	System 8	Hullgard Extra	Do Not Use Fairing	Ultra Build, High Build Epoxy Surfacing Primer	545 Epoxy Primer Quick Build Surfacer
		System System 9	Quick Build Sealer	Do Not Use Fairing	N/A	N/A
		System System 10	545 Epoxy Primer	Do Not Use Fairing	N/A	N/A

Alternative / Additional Paint Systems: This is an example of typical paint systems for substrate listed. For alternative paint systems or products, please contact your local Technical Service Representative. The system numbers are not an indicator of system performance or any order thereof.

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SURFACE PREPARATION STEEL

These pages are designed to give the key guidance for correct surface preparation for each of the substrate scenarios identified on the previous page

SURFACE PREPARATION: STEEL

This section contains preparation methods for hot and cold rolled steel:

1. Correct steel surface preparation is critical to remove the mill scale, shop primer and rust, creating a clean, bright white metal surface with an appropriate profile which will provide excellent performance. The key here is priming the surface immediately after completing the blasting, grinding or sanding before flash rusting can occur.

Preparation Notes:

- Plan your work schedule carefully! Any area which is ground or blasted must be primed during the same work shift, preferably within 8 hours. If 8 hours is exceeded, follow up with a sweep blast or a clean-up grind.
- Remove all weld spatter, smooth off weld seams and sharp edges by rounding to a minimum radius of 2mm. Ensure the surface / area is clean and dry prior to application.
- Blast using aluminum oxide or power disc to a surface profile of 50-75 microns / 2-3 mils
- Consider testing the surface for soluble salt concentration levels prior to blasting / grinding. Especially important if the vessel has been floated without being coated.

Cautions

- Do not use rags to clean the surface. The sharp metal will snag fibers from the rags. These fibers can act as wicks for moisture or other contamination to enter the paint film. This can lead to premature failure of the paint system.
- Hot works on steel will damage existing internal and external coatings. Please consult with your local Technical Service Representative for appropriate guidance.
- Hydroblasting is not an acceptable method where filled and faired paint systems are used. Where existing coatings have been removed by hydroblasting, the surface must be abrasive sweep blasted prior to application of substrate primers.
- If fairing over stainless steel is required, the stainless steel substrate must be grit blasted. Please consult with your local Awlgrip Technical Service Representative.

SURFACE PREPARATION: STEEL

Substrate Scenario	Step 1 - Clean	Step 2 - Degrease	Step 3 - Prepare	Step 4: Pre-Prime Clean	Step 5: Prime Substrate
Steel (Fairing required)	Thoroughly clean and degrease using detergents, steam cleaners or pressure washer.	Degrease using Awlgrip wipe down solvent.	Grit blast to white metal in accordance with SSPC-SP10 (SA2.5) to achieve a 50 - 75 microns / 2 - 3mils surface profile, or Grind: Use 36 grit disc to bright, clean steel to a 50-75 micron / 2-3 mils surface profile.	Use a brush or broom if necessary. Vacuum heavy debris, grinding and sanding residue and any dust and dirt. Then blow off the surface thoroughly with clean, dry compressed air.	Prime using an approved substrate primer as soon as possible (within 8 hours). If 8 hours is exceeded, follow up with a sweep blast or a clean-up grind. See application section for product and priming details.
Steel (No fairing required)	Be sure all detergent residues are rinsed from the surface. Follow with Awlgrip Degreaser (step 2).	(See table for full details of appropriate cleaning solvent.)	Sand with P80 - P120 grade abrasive discs to achieve a bright metal surface. Abrasive blasting is also acceptable.		
Stainless Steel (No fairing required)			Grind P80 - P120 to a coarse matt surface. Abrasive blasting is also acceptable.		

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APPLICATION: TYPICAL PAINT SYSTEMS: STEEL

Substrate		Direct Substrate Primer (Options)		Filling and Fairing (Options)	Intermediate Primer (Options)	Undercoat Primer (Options)	Topcoat (Options)
Steel	Steel (No fairing required)	System 1	Hullgard Extra	N/A	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer	Awlgrip HDT
		System 2	Max Cor CF + Hullgard Extra	N/A	N/A	545 Epoxy Primer Quick Build Surfacer	Awlcraft 3000
		System 3	545 Epoxy Primer	N/A	N/A	N/A	Awlcraft 2000
		System 4	Max Cor CF + Hullgard Extra	N/A	Ultra Build , High Build Epoxy Surfacing Primer	545 Epoxy Primer	
	Steel (Fairing Required)	System 5	Max Cor CF + Hullgard Extra	Awlfair LW/ Awlfair SP Awlfair FL Awlfair Surfacing Filler	N/A	545 Epoxy Primer	Awlcraft SE basecoat and (Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 clearcoat)
	Stainless Steel (No Fairing)	System 6	Hullgard Extra	N/A	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer Quick Build Surfacer	Awlgrip Topcoat
		System 7	545 Epoxy Primer	N/A	N/A	N/A	

Alternative / Additional Paint Systems: This is an example of typical paint systems for substrate listed. For alternative paint systems or products, please contact your local Technical Service Representative. The system numbers are not an indicator of system performance or any order thereof.

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SURFACE PREPARATION PREVIOUSLY PAINTED

These pages are designed to give the key guidance for correct surface preparation for each of the substrate scenarios identified on the previous page

SURFACE PREPARATION: PREVIOUSLY PAINTED SURFACES

This section contains preparation methods for previously painted surfaces: There are 3 typical scenarios for previously painted system:

1. Existing paint system requiring basic priming and finish coating.
2. Existing paint system requiring additional filling and fairing, prior to priming and finish coating.
3. OEM coated parts and areas, typically often powder coated.

Note: Powder coated paint should not be filled and faired.

Preparation Notes:

- Existing paint system – It is essential that a thorough inspection of the existing system be undertaken and its condition fully understood. In cases of damage to the previous system, it is important to reinstate the previous system layers before recoating.
- After initial evaluation the following three checks should be performed: 1) Cross Hatch adhesion, 2) Solvent Resistance, 3) Coating compatibility. Please consult your local Technical Service Representative for further details.
- Inspect the surface carefully for imperfections. Mark the imperfections with a pencil. Do not use felt tip marker or ink pen. Sand minor imperfections with P80 grit paper creating both a feathered edge and a proper surface profile over which primers and fillers can be applied. Major imperfections over large areas will require more extensive sanding, abrasive sweep blasting or spot blasting.
- Where filled and faired surfaces are to be reinstated, removing coating back to substrate by hydro-blasting is not permitted.
- On metal boats, any bare steel or aluminum exposed by sanding or blasting must be primed with a suitable substrate primer before applying other primers or fillers as necessary.
- Where patch or spot filling and fairing has been necessary, it is recommended to seal filler repairs with full coats of a suitable intermediate sealing primer (surfacing primer instead of sealing primer) such as Ultra Build, High Build or Epoxy Surfacing Filler, before applying undercoat primers.

Cautions

- Where metal substrates exist, they must be thoroughly examined for corrosion. This includes obvious corrosion damage and slight blistering which may indicate corrosion just ready to break the surface.
- If polyester putties / fillers are used, they must be kept to an absolute minimum. Only use polyester putties / fillers for pinholes and very slight scratches. Polyester putties / fillers shrink and distort rapidly and can absorb moisture or solvent during wipe down and application process. Epoxy fillers are much more stable. Avoid using acrylic or single component fillers.

SURFACE PREPARATION: PREVIOUSLY PAINTED SURFACES

Substrate Scenario	Step 1 - Clean	Step 2 - Degrease	Step 3 - Prepare	Step 4: Pre-Prime Clean	Step 5: Prime Substrate
Existing Paint System (Excellent Condition) Topcoat Color Change Only	Thoroughly clean and degrease using detergents, steam cleaners or pressure washer. Be sure all detergent residues are rinsed from the surface. Follow with Awlgrip Degreaser (step 2).	Degrease using Awlgrip wipe down solvent. (See table for full details of appropriate cleaning solvents.) Conduct solvent resistance/adhesion test to determine coating type and suitability.	P320 - P400. Ensure all gloss removed from previous finish.	Vacuum heavy debris, grinding and sanding residue, and any dust and dirt. Then blow off the surface thoroughly with clean, dry compressed air.	Prime using an approved substrate primer. If spot filling to existing paint system is required, this may be conducted before priming. See application section for product and priming details.
Existing Paint System (Fair or Good Condition) No Fairing: Primer / Topcoat Only			Sand P120 - P180. Ensure all gloss removed from previous finish.		
Existing Paint System (Poor Condition) No Fairing: Primer / Topcoat Only			Hard machine sand P80. Remove all damaged or cracked coating layers, back to sound underlying primer or filler layers.		
Existing Paint System (Fair or Good Condition) Fairing Required			Sand P60 - P80 grit or abrasive sweep blast, back to sound, underlying epoxy primer or filler layers. Remove all existing topcoat.		
Existing Paint System (Poor Condition) Fairing Required			Sand P60 - P80 (grit or abrasive sweep blast, back to sound, underlying epoxy primer or filler layers. Where necessary, spot blasting back to bare substrate may be necessary. Ensure all damaged coating layers are removed.		
OEM Powder Coated Paint System - No Fairing Permitted			Sand P180 - P240. Remove all gloss from OEM finish coat surface.		

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APPLICATION: TYPICAL PAINT SYSTEMS: PREVIOUSLY PAINTED SURFACES

Substrate		Direct Substrate Primer (Options)		Filling and Fairing (Options)	Intermediate Primer (Options)	Undercoat Primer (Options)	Topcoat (Options)
Previously Painted Surface	Existing Paint System (Excellent Condition)	System 1	N/A	N/A	N/A	545 Epoxy Primer Quick Build Primer	Awlgrip HDT
	Existing Paint System (Fair or Good Condition) No Fairing	System 2	High Build Epoxy Surfacing Primer	N/A	N/A	545 Epoxy Primer	Awlcraft 3000
	Existing Paint System (Poor Condition) No Fairing	System 3		N/A			Awlcraft 2000
	Existing Paint System (Fair or Good Condition) Fairing Required	System 4	Hullgard Extra	Awlfair LW (Lite Weight) Awlfair FL (Flexite) Awlfair Surfacing Filler Awlfair SF (Spray Filler) Epoxy Sprayable Fairing Compound	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer	Awlcraft SE basecoat and (Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 clearcoat)
	Existing Paint System (Poor Condition) Fairing Required	System 5	Hullgard Extra				
	OEM Powder Coated Paint System No Fairing Permitted	System 6	N/A	N/A	N/A	545 Epoxy Primer Quick Build Surfer	Awlgrip Topcoat

Alternative / Additional Paint Systems: This is an example of typical paint systems for substrate listed. For alternative paint systems or products, please contact your local Technical Service Representative.

The system numbers are not an indicator of system performance or any order thereof.

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SURFACE PREPARATION COMPOSITES

These pages are designed to give the key guidance for correct surface preparation for each of the substrate scenarios identified on the previous page

SURFACE PREPARATION: COMPOSITES WITH GELCOAT SURFACES

Composites: Gelcoat Surfaces:

1. New and Sound Condition gelcoat: New and sound gelcoat with no damage, cracks or crazing in evidence.
2. Fair Condition gelcoat: Aged gelcoat, with some down-glossing and hazing to the surface. No cracks.
3. Moderate to Poor Condition gelcoat: Aged, crazed and cracked gelcoat - existing protective gelcoat is cracked and crazed and will require some grinding, repairs and remedial works.

Preparation Notes:

- **Cleaning:** Avoid using water-based cleaning solutions or methods on bare composite after grinding, if exposed fibers are present. The fibers will absorb the water and could cause future cracking and delamination.
- **Grinding:** When grinding back crazed and cracked gelcoat, ensure the substrate is structurally sound before filling. It may be necessary to re-laminate, if the composite is structurally compromised.
- **Sanding:** Ensure there are no glossy areas remaining after sanding. This can lead to adhesion issues.

Cautions

- Take care not to grind the GRP laminate under the gelcoat unless this is also damaged. Do not remove more laminate than necessary.

SURFACE PREPARATION: COMPOSITES WITH GELCOAT SURFACES

Substrate Scenario	Step 1 - Clean	Step 2 - Degrease	Step 3 - Prepare	Step 4: Pre-Prime Clean	Step 5: Prime Substrate
New and Sound gelcoat (As new condition) Fairing Required	Thoroughly clean and degrease using detergents, steam cleaners or pressure washer. Be sure all detergent residues are rinsed from the surface.	Degrease using Awlgrip wipe down solvent. (See table for full details of appropriate cleaning solvents).	Sand entire surface smooth with P60 – P80 to ensure the surface profile is achieved.	Vacuum to remove grinding/ sanding dust and residue then blow off the surface thoroughly with clean, dry compressed air. Use a brush if necessary. Solvent clean to remove any grease and dirt from the prep process.	Prime using an approved substrate primer. See application section for product and priming details.
New and Sound gelcoat (As new condition) No Fairing Required			Sand entire surface smooth with P150 – P220 to ensure the surface profile is achieved.		
Fair Condition gelcoat (No Cracks) Fairing Required			Sand entire surface smooth with P60 – P80 to ensure the surface profile is achieved.		
Fair Condition gelcoat (No Cracks) No Fairing Required			Sand entire surface smooth with P150 – P220 to ensure the surface profile is achieved.		
Moderate to Poor Condition gelcoat (Aged, Crazed and Cracked)	Follow with Awlgrip Degreaser (step 2).		Remove all cracks, crazing and damaged areas of gelcoat surface by grinding with P36 - P60. Heavy crazing / cracks must be fully removed back to sound substrate. Sand entire surface smooth P60 – P80 to ensure the surface profile is achieved.		

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SURFACE PREPARATION: COMPOSITES

Composites: Bare Laminates:

1. New / Repaired Chopped Strand Matt Laminates – This is a common boat building substrate of glass fibers infused with (typically) polyester or vinylester resins.
2. Woven Fiberglass Cloth – Directional glass fiber cloth infused with (typically) polyester or vinylester resins.
3. Woven or Directional Carbon Fiber – Resin Infused or Pre-Impregnated (typically epoxy resins).

Preparation Notes:

- **Cleaning:** Avoid using water-based cleaning solutions or methods on bare composite, if exposed fibers are present. The fibers could absorb the water and cause future cracking and delamination.
- **Grinding:** When grinding back chop strand GRP surfaces, ensure the substrate is structurally sound before filling. It may be necessary to re-laminate if the composite is structurally compromised.
- **Sanding:** Ensure there are no glossy areas remaining after sanding. This is particularly important on bare composite as the resin surface is hard and may not be completely fair. Insufficiently prepared surface could lead to future adhesion issues.

Cautions

- Preparation of bare composites should be applied to the resin layer rather than the reinforcing layers. It is important to assess the resin layer on the surface of the fibers, if this layer is not substantial enough for the required preparation, it may be necessary to take special care or add more resin before sanding.
- When sanding carbon composites, if black sanding dust is apparent, then the resin layer has been breached and damage may be being done to the reinforcing fibers.

SURFACE PREPARATION: COMPOSITES

Substrate Scenario	Step 1 - Clean	Step 2 - Degrease	Step 3 - Prepare	Step 4: Pre-Prime Clean	Step 5: Prime Substrate
Chopped Strand Matt Surfaces Fairing Required	Thoroughly clean and degrease using detergents, steam cleaners or pressure washer. Be sure all detergent residues are rinsed from the surface. Follow with Awlgrip Degreaser (step 2)	Degrease using Awlgrip wipe down solvent. (See table for full details of appropriate cleaning solvents.)	Sand entire surface smooth P36 – P60. Do not leave any glossy resin spots.	Vacuum to remove grinding / sanding dust and residue then blow off the surface thoroughly with clean, dry compressed air. Use a brush if necessary. Solvent clean to remove any grease and dirt from the prep process.	Prime using an approved substrate primer. See application section for product and priming details.
Chopped Strand Matt Surfaces No Fairing required			Sand entire surface smooth P80 – P120. Do not leave any gloss resin spots. Minimize sanding through to bare fibers.		
Uni-directional, Woven, Bi and Tri Axial Fiberglass and Carbon Matt Fairing Required			Sand entire surface smooth P80 – P100. Do not leave any gloss resin spots. Do not break through resin surface.		
Uni-directional, Woven, Bi and Tri Axial Fiberglass and Carbon Matt No Fairing Required			Sand entire surface smooth P80 – P120. Do not leave any gloss resin spots. Minimize sanding through to bare fibers.		
New GRP Woven and Carbon Fiber (resin infused - with Peel Ply), For all paint systems			Remove Peel Ply directly prior to application of primer.		

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APPLICATION: TYPICAL PAINT SYSTEMS: COMPOSITES WITH GELCOAT SURFACES

Substrate		Direct Substrate Primer (Options)		Filling and Fairing (Options)	Intermediate Primer (Options)	Undercoat Primer (Options)	Topcoat (Options)
Composites with Gelcoat Surfaces	New and Sound Gelcoat (As new condition) Fairing Required	System 1	Hulgard Extra High Build	Awlfair LW (Lite Weight) Awlfair FL (Flexite) Awlfair Surfacing Filler Awlfair SF (Spray Filler) Epoxy Sprayable Fairing Compound	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer	Awlgrip HDT
	New and Sound Gelcoat (As new condition) No Fairing Required	System 2	High Build Quick Build Sealer Quick Build Surfacer 545 Primer	N/A	N/A	N/A	Awlcraft 3000 Awlcraft 2000
	Fair Condition Gelcoat (No Cracks) Fairing Required	System 3	Hulgard Extra High Build	N/A	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer	Awlcraft SE basecoat and (Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 clearcoat)
	Fair Condition Gelcoat (No Cracks) No Fairing Required	System 4	Ultra Build High Build Epoxy Surfacing Primer	N/A	N/A	545 Epoxy Primer	
	Moderate to poor condition Gelcoat (Aged, Cracked and Cracked)	System 5	Hulgard Extra High Build	Awlfair LW (Lite Weight) Awlfair FL (Flexite) Awlfair Surfacing Filler Awlfair SF (Spray Filler) Epoxy Sprayable Fairing Compound	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer	Awlgrip Topcoat

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APPLICATION: TYPICAL PAINT SYSTEMS: COMPOSITE SURFACES

Substrate		Direct Substrate Primer (Options)		Filling and Fairing (Options)	Intermediate Primer (Options)	Undercoat Primer (Options)	Topcoat (Options)
Composites Surfaces	Resin Rich Smooth Epoxy Surface. Intention to showcase carbon weave. No filling required	System 1	N/A	N/A	N/A	N/A	Awlgrip HDT Awlcraft 3000 Awlcraft 2000 Awlwood Clear (Gloss or Matt)
	Chopped Strand Matt Surfaces Fairing Required	System 2	Hulgard Extra	Awlfair LW (Lite Weight), Awlfair FL (Flexite), Awlfair Surfacing Filler/Awlfair SF (Spray Filler), Epoxy Sprayable Fairing Compound	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer	Awlgrip HDT
	Chopped Strand Matt Surfaces No Fairing Required	System 3		N/A			Awlcraft 3000
	Uni-directional, Woven, Bi and Tri Axial Fiberglass and Carbon Matt Fairing Required	System 4		Awlfair LW (Lite Weight), Awlfair FL (Flexite), Awlfair Surfacing Filler, Awlfair SF (Spray Filler), Epoxy Sprayable Fairing Compound			Awlcraft 2000
	Uni-directional, Woven, Bi and Tri Axial Fiberglass and Carbon Matt No Fairing Required	System 5		N/A			Awlcraft SE basecoat and (Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 clearcoat)
	New GRP Woven and Carbon Fiber (Resin infused – with Peel Ply) For All Paint Systems	System 6		Awlfair LW (Lite Weight), Awlfair FL (Flexite), Awlfair Surfacing Filler, Awlfair SF (Spray Filler), Epoxy Sprayable Fairing Compound			Awlgrip Topcoat

Alternative / Additional Paint Systems: This is an example of typical paint systems for substrate listed. For alternative paint systems or products, please contact your local Technical Service Representative. The system numbers are not an indicator of system performance or any order thereof.

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“The Awlwood finish is the best I have ever seen on a varnished hull sailing yacht – the looks and comments of admiration we get, wherever we sail, are incredible.”

CAPTAIN

TEMPUS FUGIT, 2014



AWLWOOD

Awlwood gives an exceptional finish lasting four times longer than a traditional premium yacht varnish*. Based on a proprietary formulation, this clear coat finish combines science and nature to yield stunning results, beyond a traditional varnish, beyond compare.



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SURFACE PREPARATION TIMBER

These pages are designed to give the key guidance for correct surface preparation for each of the substrate scenarios identified on the previous page

SURFACE PREPARATION: TIMBER (EXTERIOR AND INTERIOR)

Substrate: This section contains preparation methods for Timber / Wood Substrates

- Timber substrates may be solid, laminated or veneered plywood and will exhibit variation in movement and stability.
- The following surface preparation system is recommended for all but the most severe cases of deterioration on wooden substrates. Soft, rotted or brittle timber cannot be effectively restored.
- The wood should be clean, dry, smooth and well seasoned. Moisture content must be below 14%. Never paint wet or green timber as this may result in blistering and / or detachment.

Preparation Notes:

Aged / Weathered / Previously Coated Timber

- Remove at least 300 microns / 12 mils / 0.3mm of the existing timber fibers. Bleached / UV damaged timber fibers exist deep in the deep grain pits.
- If timber is badly weathered, scrub with the grain using a stiff bristled wire brush and running water to remove all grey timber from the surface before sanding.
- The surface of the timber should be mechanically and / or hand sanded until coloration is even and the original timber tone has been exposed.
- Any cracks in the timber should be epoxy filled or splined with similar timber prior to sanding. Round off all edges and radius to ensure that no sharp corners remain.
- Previous coating remnants trapped in the grain **MUST** be removed prior to applying a new coating system.

All Timber

- Inspect new timber thoroughly for quality. Farmed / forced growth plantation timber may be artificially colored / treated to create an even color. This may bleach and discolor in service where clear brightwork systems are used.
- Laminations: Check for quality of lamination glue ups. Split or open laminations will need suitable filling as part of preparation.
- Timber plugs and repairs: Ensure glue squeeze out from plugs and repairs is thoroughly cleaned and sanded. Poorly cleaned glue residue will leave a stain on timber after varnish applications.
- Vacuum timber with a brush attachment. Vacuum along grain, across grain and then along grain again. (3 x vac). Repeat vacuuming until a white rag is clean and shows no sanding dust residue.
- Keep timber clean, dry and covered (out of direct sunlight) until ready to begin coating.
- Final sanding of any timber should be no finer than P120 grit (unless specified differently on product TDS), sanding with the grain prior to first coat of primer or varnish.
- After final degreasing, timber should only be handled using clean gloved hands.

SURFACE PREPARATION: TIMBER (EXTERIOR AND INTERIOR)

Substrate Scenario	Step 1 - Restore	Step 2 - Clean, Inspect and Repair	Step 3 - Final Sand	Step 4: Clean	Step 5: Degrease	Step 6: Prime Substrate
Timber – Weathered / Greyed	DA Sand or Hard Block Sand P80 aggressively to bright uniform timber grain. Use wire brush to clean / scrape grain if necessary.	Ensure timber is back to ‘as new’ condition with original color tone present. Compressed air blow-down, followed by vacuum with brush attachment to remove all sanding dust. Carefully inspect the deep grain for signs of unremoved UV damaged / weather grain or old varnish remnants. Check moisture content. Aim for <14%. Ensure joinery and seams are inspected for gaps and cracks and repaired where necessary.	Block Sand timber surface thoroughly, in line with grain. Sand P120 grit (Brightwork, Non-Faired or Veneers). Sand P60 grit (If Filing and Faring required).	Compressed air blow-down, followed by thoroughly vacuum with brush attachment to remove all sanding dust. White rag cleanliness check for effective sanding dust removal.	Degrease timber with a fast solvent using 2 cloth method. Acetone, Awlwood OT0202, OT0003, and OT0115 are all suitable solvents.	Apply 1st coat of Varnish or Primer directly after degreasing. See Substrate Primers / Product table for options.
Timber – Previously Coated	DA Sand or Block sand P80 / P120 to bright uniform grain.					
Timber – New	N/A					

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Cautions

- The Awlgrip Topcoat may crack over working seams and miters. Two component paint systems may crack when used over unstable or moving joinery. Awlgrip does not consider cracking over seams or miters a failure. Please consult local Technical Service Representative for timber paint system suitability and options.
- In general, it is not recommended to apply paints or varnishes to timber substrates where wood preservatives and other treatments have been used. However, in certain circumstances, there may be acceptable scenarios. Please consult local Technical Service Representative for advice or clarification.
- Avoid use of teak cleaners prior to painting or varnishing. Oxalic acid residues may impede proper curing of both primers and topcoats.
- If bare timber has been saturated with salt water at any stage, scrub well with fresh water to remove salt deposits from the timber before commencing sanding.
- If the timber gets wet after the final sand, water spots may appear. Re-sand these areas before priming.
- Avoid using Awlgrip OT0008 Reducer for final wipe down prior to application of Awlwood.

APPLICATION: TYPICAL PAINT SYSTEMS: TIMBER – CLEAR (VARNISH) SYSTEMS

Interiors: All systems are suitable for both Exterior and Interior areas.

Varnishing Tips:

- Coating brightwork / varnished timber requires the same basic conditions as other paintwork. Surfaces to be coated must be clean and dry. Please refer to surface preparation section for guidance.
- Use good quality, natural bristle varnish brushes. Natural bristle badger hair brushes are best. Thoroughly “wetting” the bristles before applying material helps prevent bubbles in the film.
- Mix and use small quantities of Awlspar, Awlbrite Clear, or Awlwood at a time (20 minutes application time as a rule). Keep the original containers covered when not in use. Do not pour unused varnish back into containers.
- Do not shake Awlspar, Awlbrite Clear, or Awlwood. Shaking creates air bubbles in the material. When adding converter to Awlbrite Clear or reducer to Awlspar or Awlwood, hand stir only.
- Apply Awlspar, Awlbrite Clear, or Awlwood in shaded, well-ventilated areas. Optimum application temperatures are between 21°C / 70°F and 32°C / 90°F.
- Avoid applying Awlbrite Clear or Awlwood to hot surfaces or in direct sunlight. Avoid applications of Awlwood primer and gloss over a warm or warming substrates. This may cause some micro bubbling in the product.
- When brush applying varnishes, do not overwork the product once applied. It will flow and stretch out naturally.
- For best system longevity in exterior areas, the final film thickness of all varnish systems over the grain high points should be no less than 250microns / 10mils. Under-applied systems will deteriorate more rapidly. If heavy or aggressive inter-coat sanding is used to flattened texture, additional coats may be required to attain sufficient film build.

APPLICATION: TYPICAL PAINT SYSTEMS: TIMBER – CLEAR (VARNISH) SYSTEMS

Substrate			Priming the Timber	# of Coats	Method	Grain Fill / Build Coats	# of Coats	Finish Coat	# of Coats	Method
Timber / Wood	Timber / Wood	System 1 Ultimate Exterior Brightwork System	Awlspar Varnish	2-3 (Mix 1st coat 1:1 with OT0016)	Roll, Brush	Awlbrile Clear Gloss	7-8	Awlbrile Clear Gloss	2	Spray, Roll, Brush
		System 2 Exterior Traditional Varnish System	Awlspar Varnish	1	Roll, Brush	Awlspar Varnish	6-8	Awlspar Varnish	1	Spray, Roll, Brush
		System 3 Awlwood Primer / Finish System	Awlwood Primer Red	1 (Do not reduce)	Roll, Brush	Awlwood Gloss Coats 1-2: Do not thin. Brush / Roll only. Coats 3-8 maybe thinned up to 10%, if desired. Consult TDS for more information.	7-8	Awlwood Gloss or Awlwood Satin Matt	1	Spray, Roll, Brush
			Awlwood Primer Yellow	1 (Do not reduce)	Roll, Brush					
			Awlwood Primer Clear	1 (Do not reduce)	Roll, Brush					

Alternative / Additional Paint Systems: This is an example of typical paint systems for substrate listed. For alternative paint systems or products, please contact your local Technical Service Representative. The system numbers are not an indicator of system performance or any order thereof.

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APPLICATION: TYPICAL PAINT SYSTEMS: TIMBER – PAINT (COLOR) SYSTEMS

Substrate		Direct Substrate Primer (Options)		Filling and Fairing (Options)	Intermediate Primer (Options)	Undercoat Primer (Options)	Topcoat (Options)
Timber / Wood	Solid Timber Plank-on-frame construction (Clinker / Carvel etc.)	System 1	545 Epoxy Primer	Fairing not recommended	(Optional) Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer Quick Build Surfacer	Awlgrip HDT
			Hulgard Extra Epoxy Primer	Fairing not recommended	(Optional) Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer Quick Build Surfacer	Awlcraft 3000 Awlcraft 2000
	Plywood Laminated sheet material construction	System 2	Hulgard Extra Epoxy Primer	Awlfair LW (Lite Weight) Awlfair FL (Flexite) Awlfair Surfacing Filler Awlfair SF (Spray Filler) Epoxy Sprayable Fairing Compound	Ultra Build High Build Epoxy Surfacing Primer	545 Epoxy Primer Quick Build Surfacer	Awlcraft SE basecoat and (Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 clearcoat)
	Wood - Epoxy Epoxy and Glass Laminated construction over timber	System 3	Please refer to composite substrate paint systems for suitable Wood – epoxy systems.				Awlgrip Topcoat

Alternative / Additional Paint Systems: This is an example of typical paint systems for substrate listed. For alternative paint systems or products, please contact your local Technical Service Representative.
Please Note: Paint systems over planks timber substrates or other timber substrates that are not dimensionally stable WILL result in cracking of the paint system.
The system numbers are not an indicator of system performance or any order thereof.

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The background image shows a close-up of a hand wearing a white protective suit sleeve, holding a yellow applicator strip. The strip is being applied to a metallic surface, which has a brushed metal texture. The background is slightly blurred, showing a blue sky with white clouds. The overall scene suggests a professional painting or coating application process.

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CLEANERS/ WIPE DOWN SOLVENTS

Designed to provide basic paint system
checklist scenarios for applicators to use
for each of the substrate scenarios

WIPE DOWN SOLVENTS / CLEANERS

Region	Product Name	Product Attributes Notes / Pros / Cons
All Regions	OT0008 Awlprep Surface Cleaner	- A fast evaporating surface cleaner used to wipe down final primed or topcoated surfaces before and after sanding that will remove hand oils, light grease and other light surface contaminants. - Use with the Two Cloth Method. Wipe down with Awlprep OT0008 before and after sanding of primers, and topcoats. - Awlprep OT0008 has a "drying" effect which removes latent moisture from the surface.
Europe, Middle East, and Africa	OT0340 Surface Cleaner	- General purpose surface cleaner used to wipe down substrates, finish primers and topcoats before and after sanding. - Use with the Two Cloth Method wipe down before and after sanding of primers and topcoats.
	International 600 Wipe Down Solvent	A professional cleaning solvent that's been specially formulated to remove tough contaminants such as waxes, oils and sanding residues, before sanding, surface preparation or painting.
	International Super Cleaner	- Super Cleaner is a highly concentrated detergent-type cleaner for use neat or dilutes with water. - Removes wax, oil and contamination effectively. Suitable for hand and high-pressure machine washing. - Degreases and cleans with no damage to gelcoat or paintwork.

[CLICK HERE TO SEE TABLE AT FULL SIZE](#)

Region	Product Name	Product Attributes Notes / Pros / Cons
Asia Pacific North America	OT0115 Awlprep Plus Wax and Grease Remover	- A medium fast evaporating, strong, solvent designed to remove waxes, oils, and greases commonly found on painted surfaces, new or aged gelcoat, aluminum, or steel. - Use before sanding the substrate prior to priming. - Use with the Two Cloth Method to apply and remove OT0115. - Do not use OT0115 after sanding primers or topcoats. If the need arises to use OT0115 on sanded primers or topcoats to remove heavy contamination, re-sanding the surface will be required.
	OT0170 Awlprep 400	- General purpose surface cleaner – five times slower than OT0008. - Use to wipe down final primed or top coated surfaces before and after sanding. - OT0170 will remove hand oils, light grease and other light surface contaminants. - Use with the Two Cloth Method to apply and remove the OT0170. - The slower evaporation rate of OT0170 allows for larger areas to be cleaned in hot weather using the Two Cloth Method without creating wipe marks. - OT0170 is also excellent for removing tape residue.
North America	Interlux Fiberglass Solvent Wash 202	- Effective at removing mold release agents, wax, oil and grease from hulls of bare fiberglass boats. - It also removes wax and silicone contamination from painted hull surfaces that are being prepared for repainting. - Use Fiberglass Solvent Wash 202 prior to painting fiberglass gelcoats, regardless of their age. - Use before sanding the substrate and prior to priming.
	Interlux Fiberglass Surface Prep YMA601V	Fiberglass Surface Prep YMA601V is a low VOC cleaner that emulsifies and lifts mold release agents and other contamination from the surface of fiberglass gelcoats so that it can be removed with clean, fresh water.

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PAINT DEFECTS - EFFECTS AND CAUSES

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PAINT DEFECTS EFFECTS AND CAUSES

Defect Type / Name	Appearance / Description	Key Causes
Adhesion Failure (Cohesive)	Splitting of a coating layer within itself. This is more common with epoxy primers with a higher talc content. Over-application may lead to a weakening within the coating layer and internal splitting may result, especially in a multicoat system.	- Heavy / over-application of paint layer - Incorrectly catalyzed paint - Solvent entrapment due to high paint film thickness - Contaminated air supply
Adhesion Failure (Intercoat)	Separation of a coat (or coats) of paint from the previous coat or from the substrate.	- Missed over-coating window - Poor surface preparation - Incompatible coatings - Contamination – grease, oils, etc. - Aging / UV deterioration or underlying coating chalking
Amine Bloom	A waxy or greasy appearance possibly including a yellow or amber tinted residue that can appear on amine-cured epoxy products. This includes all epoxy primers, clearcoats and glues (especially used on timber projects).	- Insufficient environmental control during and after application process. - High humidity / moisture - Low application temperature or low curing temperature - Incorrect mixing ratio of products - Incorrect solvent choice – typically too slow
Chalking / Bleaching (Topcoats)	Dis-coloration and damage to a topcoat, causing a potential change in color and a reduction in the perceived gloss. Chalking (loss of gloss) and bleaching (resultant change in color) may be a localized effect, beginning in high UV, high traffic or heavily cleaned or scrubbed areas.	- Aggressive cleaning process or certain cleaning products – Spills and contaminants from the following: task cleaners and brighteners, metal cleaners, strong detergents, hydraulic fluids, surfactant lotions containing nano technology - Paint application of topcoat too thin (low topcoat DFT); dry thin final layer - Buffing and polishing of polyester urethane coatings - Oxalic / phosphoric acid attack - Aged / UV degradation
Cracking	Splitting of the dry paint film. This scaly pattern goes from thin hairline cracks to deep cracks in the topcoat finish and possibly in the undercoat.	- Excessive paint film thickness - Overcoating too quickly – excessive solvent entrapment - Hard paint applied over softer underlying paint - Underlying substrate movement or flexing - Aged coating e.g. Antibulging
Cissing	Wet paint is unable to fully wet-out the surface, either immediately noticeable after application, or very shortly thereafter.	- Surface / substrate contamination (i.e. grease, wax or polishes) - Contamination of the paint with silicon which affects paints' ability to flow out - Existing surface tension too high, previous surface not sanded or substrate is incompatible - Incorrect or incompatible solvent choice / incorrect blends for paint product - Contaminated, low grade or low quality substrate wipe down solvent - Insufficiently mixed paint
Craters	Circular recesses with a diameter from 0.5 to 3mm. The problem may result in appearance from a very fast recess in the topcoat to a deep fault which extends back to the substrate. In some scenarios, a solid / semi solid (gelled) particulate may be visible in the crater center.	- Craters may be caused by many application factors - Excessive solvent in wet paint or excessive wet film thickness causing solvent popping - Particulate contaminant, paint flows away from particle (e.g. sanding dust, paint spatter or general particulate matter) - Aging / UV deterioration or underlying coating chalking - Air velocity too high, causing a rapid surface drying of the wet paint film, leading to trapped solvents
Dry Spray	Fine dry atomized spray droplets from the painting process stuck to the surface, or droplets that have not been absorbed by the paint film. The film appears dry and grainy.	- Spray atomizing pressure too high - Solvent choice too fast - Air velocity too high - Spray gun too far from surface - Spray technique – e.g. arcing - Ambient temperature too high
Dimples	A dimple may appear as a single defect, but more commonly in clusters. In most cases, a dimple is a surface disruption, rarely propagating through to the previous layer. Typically, dimples are caused by contamination to the paint, prior to application.	- Airline, fluid line or compressor oil contamination - Mixing bucket / pot contamination - Dirty spray gun, spray gun cup or pressure pot - Dirty cleaning solvent, either on substrate or in spray equipment - Telegraphing of underlying structure (i.e. bridging of an underlying pinhole or depression) - Spray gun spatter / spit from product build up on spray gun tip / low atomization pressure
Flooding / Floating (Color Flood / Floet)	A characteristic of paint which may appear soon after application due to pigment separation. The visual appearance is the paint may be drying to a darker or lighter shade than other parts of the paint surface – often painted at different times but with the same color / batch.	- Varying WFTs (Wet Film Thickness) - Varying solvent type and quantity - Varying environmental conditions - Inconsistent mixing
Fisheyes	A fisheye is a small spot with an absence of paint (hole), occasionally encircled by a ring of paint thicker than the surrounding paint film, caused by a contamination on the surface before application.	- Substrate contaminants prior to painting - Surface contaminants such as grease, wax or task sanding dust on the substrate - Surface not suitably degreased – flushing oils or other city deposits from nearby metal grinding - Previous coating protection applied such as a ceramic / silicon-based product
Greasy / Oily Surface	This layer of greasy oil-like material on topcoat surface after paint has cured. Can be seen when wiping a finger across surface. Sometimes torchlight assists viewing.	- Paint contaminated with dissolved EPDM Ethylene Propylene Diene Monomer rubber from fuel line. Do not use EPDM fuel lines for Awlgrip Paints. Please check all fuel line types for safe use with Yacht products prior to application - High humidity application conditions - Low ventilation application conditions
Low Opacity	Ginning is the effect of the underlying surface (previous paint layer or the substrate) showing through the topcoat. Common where a lighter topcoat is overcoating a darker primer or substrate. Common also in weaker tints such as orange and yellow.	- Insufficient DFT (Dry Film Thickness) - Certain colors with low strength pigments (i.e. reds and oranges) - Over-reducing / thinning - Application of a lighter color over a strong or darker undercoat
Loss of Gloss	Loss of gloss or matting of the coat is a very broad term. There are many reasons for loss of gloss and it is important to establish the more precise term that is being observed such as 'haziness' or 'chalking' for example to establish the cause.	- High humidity or low curing temperatures during and after application - Low topcoat DFT resulting in dry surface / poor coalescence - Aggressive cleaning process or certain cleaning products – Spills and contaminants from task cleaners and brighteners, metal cleaners, strong detergents, hydraulic fluids, surfactant lotions containing nano technology - Buffing and polishing of polyester urethane coatings - Abrasion and mechanical wear, e.g. tender rub, paint abrasion from superstructure, crew safety lines and feet - Coating covered prior to full cure - Contact with water during the curing stage
Hardness Development (Micro-scratching or paint system softness)	Paint film or filler softening can be observed in many forms from micro scratching, tacky sanding to poor in-service longevity. It is important to understand the thermo-elastic or thermo-plastic qualities of a coating type before determining if softening is normal.	- Cleaning new paint before it has fully cured / hardened - Cleaning paintwork with dust, fine grit or sanding residue on the surface - Poorly / inconsistently mixed filler layers - Over-application of certain products – Single pack paints and varnishes - Rapid overcoating (solvent entrapment) - Low application or curing temperature - Coating surface (substrate temperature) is very hot - Incorrect ratio of hardener / activator to base component
Particulate Contamination (in paint film)	Paint dust particles or 'dirt' particulates from the spray environment embedded in the new paint surface. Commonly these are cloth fibers or sanding dust particles. A 100 micron (0.1mm) dust particle can leave a raised area of well over 1mm wide on the paint surface.	- Clothing fibers, hair etc - Sanding / grinding dust from nearby projects - Paper (cellulose) fibers – often from cheap paint filters or brown masking paper - Dirty mixing vessels, mixing sticks or plastic buckets that are not solvent resistant - Airborne sand / grit from other yard activities
Orange Peel	Surface texture of the paint similar to surface of an orange skin. Orange peel can be a natural characteristic and not always a defect.	- Incorrect spray gun set-up / settings - Insufficient solvent or solvent loss - Incorrect mixing / over-catalyzation - Temperature too high - Air velocity too high - Aplicator's technique / spray gun positioning to the surface
Pinholes	Small or microscopic holes that become evident in the paint surface during or after (most commonly) application. Pinholes are extremely hard to observe in primers, fillers or most finishes and may only become visible once a gloss coating has been applied. Pinholes are almost impossible to bury with liquid paint and require surface filling to seal pores. Using wet solvent wipes can help identify presence of pinholes.	- Porous underlying substrates that have not been fully sealed, typically from gelcoats, underlying GRP laminates and fillers - Pinholes left by solvent popping (craters) from previous coating applications (lower application of previous layers) - Contaminations buried within previous layers (i.e. poorly removed ceramic coating residues)
Solvent Pop	Blisters like surface defects due to solvent entrapment in the surface of the paint film. Caused by rapid solvent release. Solvent popping can lead to pinhole issues for subsequent paint layers.	- Over-reducing of wet paint product - Over-application / excessive WFT (Wet Film Thickness) - Incorrect / inappropriate reducer choice - Air velocity too high, surface drying paint to fast leading to trapped solvents - Over-thinning – low viscosity - Incorrect spray gun set up – tip too large - Too much paint applied - Paint not curing, no catalyst
Runs / Sags	This effect occurs on vertical surfaces. Paint from the upper portion drips or flows down to the lower portion resulting in "tear-like" appearance on the lower edge.	- Excessive coating WFT (Wet Film Thickness) – leading to solvent entrapment - Over-coating too rapidly – solvent entrapment - Over-reducing / thinning of wet paint - Skipping critical paint layers – e.g., missing surfacing fillers and surfacing primers - Insufficient substrate sanding - Post-curing of substrate layers (fillers or GRP laminate substrates)
Die Back / Shrink Back	Shrink back is typically seen with high gloss varnishes or topcoats over timber or faired surfaces, where gradual release of solvent over time, results in the coating shrinking back into the grain / sanding scratches. This is commonly caused by rapid or heavy overcoating and solvent reduction.	- Using a sanding grade too coarse for primer / topcoat - Skipping critical paint layers – e.g., missing surfacing fillers and surfacing primers - Insufficient correction and repair of underlying structure and defects - Underlying substrate such as GRP not post-cured
Telegraphing	Telegraphing may cover a few defects. This could be the showing through of sand scratches, wipe marks, fingerprints, water spots and even tape marks from an underlying paint layer. Telegraphing may appear over days, weeks and even months after application.	- Mineral deposits within rainwater, sea water, or cleaning water that have been left to dry and bake hard onto a paint, glass, or metal surface - Detergent residues that have been left to bake onto the surface before they can be rinsed away with fresh clean water. The higher the pH (alkali) the more damaging the detergent will be (e.g. teak deck cleaners) - Acidic cleaners such as teak deck restorers or stainless steel cleaners. Oxalic or phosphoric acid containing products - Dry acid deposition – in polluted areas. Often activated by the morning dew / condensation - Poor maintenance process or regime, including washing during hottest times of day
Waterspotting	Appears as light, whitish circular spots on the paint surface caused by the drying of a solution of water combined with mineral salts. The inner areas are normally intact, while the outer edges are often slightly raised. Type 1 Waterspots – Above Surface Mineral Deposits (ASMD), Type 2 Waterspots – Below Surface Water Spot Etching (BSWSE), Type 3 water spotting can be a progression of Type 1 water spotting if left untreated. Water spotting can occur on glass, metals and paints.	- Mineral deposits within rainwater, sea water, or cleaning water that have been left to dry and bake hard onto a paint, glass, or metal surface - Detergent residues that have been left to bake onto the surface before they can be rinsed away with fresh clean water. The higher the pH (alkali) the more damaging the detergent will be (e.g. teak deck cleaners) - Acidic cleaners such as teak deck restorers or stainless steel cleaners. Oxalic or phosphoric acid containing products - Dry acid deposition – in polluted areas. Often activated by the morning dew / condensation - Poor maintenance process or regime, including washing during hottest times of day
Wipe Marks	When a cleaning solvent is not effectively dry wiped from a substrate and painted over, it can leave a visible residue that looked like a wiping mark. Wipe marks can migrate through a coating over time, and may not appear straightaway.	- Poor, incomplete wipe down process - Using a dirty or unsuitable cleaning solvent - Not changing cleaning rags enough - Rushing the wipe down process - Some sandused cleaning rags may be unsuitable and leave residue

The background of the entire image is a vibrant, abstract composition of paint splashes and splatters. The colors are primarily red, blue, purple, yellow, and white, creating a dynamic and energetic visual field. The splatters vary in size and intensity, with some areas showing more concentrated colors and others being more diluted.

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GLOSSARY TERMS



GLOSSARY OF TERMS

Ablative Coating: A coating that is designed to wear away in service.

Accelerator: Catalyst, a material which accelerates the curing of certain coatings. Pro-Cure X-98 and X-138 are accelerators for use in select Awlgrip finishes.

Acid: A substance below 7 on a pH scale. Different types of acid: phosphoric, sulfuric, oxalic, and hydrofluoric. Acids are often found in cleaners such as metal cleaners or teak deck restorers.

Acrylic: Coating based on a polymer containing short chain esters of acrylic and methacrylic acid. Awlcraft 2000 is an acrylic resin crosslinked with an isocyanate resin (acrylic urethane).

Activator: Term used for the converter or curing agent. A required component in a coating's mix.

Additives: Any one of a number of special chemicals added to paint to bring about special effects; examples are Pro-Cure Accelerator, Griptex Non-Skid, and Flattening Agent.

Adhesion: The phenomenon by which one material is attached to another by means of surface attraction.

Adsorption: Process of attraction to a surface; attachment. The retention of foreign molecules on the surface of a substance.

Air Cap: The structure at the front of a spray nozzle which directs compressed air against the paint to form and shape an atomized cloud of droplets.

Airless Spray: System of applying paint in which the paint, under high pressure, is passed through a nozzle and broken into droplets (i.e. atomized) when it enters the lower pressure region outside the gun tip. A much smaller volume of air is used than in conventional air spraying so that problems of dry spray and paint bounce-back are reduced.

Air Spray: System of applying paint in the form of tiny droplets in air; paint is broken into droplets (i.e. atomized) by a spray gun as a result of being forced into a high velocity air stream. Shape and paint density of the resulting droplet cloud can be controlled by air pressure, paint viscosity, and gun tip geometry. Air spray is preferred for applying Awlgrip topcoats.

Atomization: Formation of tiny droplets of liquid as in paint spraying process; atomization is usually caused by turbulence in an air stream, or sudden drop in pressure.

Blast / Blasting: The process of paint removal using high pressure air with a media such as dry ice, grit, shot and infused into the air stream.

Blistering: The formation of hollow bubbles or water droplets in a paint film; usually caused by the expansion of air or moisture trapped beneath the film. Blisters can form around salt crystals trapped under a paint film because salt attracts moisture.

Blow-Down: The process of using compressed air to blow sanding residue and similar material from a surface prior to final cleaning.

Break-Free Rinse: When the rinse water sheets out over a surface with no holes, breaks, or 'pull backs' after cleaning. This indicates the surface is clean; free of dirt, wax, grease, oil, and other contaminants. Also known as a water break-free surface.

Brightwork: All wooden substrates that require a clear coating system.

GLOSSARY OF TERMS

Catalyst: Chemical used to change the rate of a chemical reaction; catalyst differs from a converter / curing agent in that the catalyst is not itself chemically consumed in the reaction, while a curing agent is consumed. Technically, catalysts that increase reaction rates are called accelerators; those which decrease reaction rates are called inhibitors or retarders. Often used incorrectly to identify converters or co-reactants in two component coatings. See Converter.

Checking: Type of failure in which cracks in the film begin at the surface and progress downward; the result is usually a straight V-shaped crack which is narrower at the bottom than the top. Checking is a method for relieving surface stresses. If the underlying surface is exposed, the failure is called cracking.

Compounding: Compounding is when you use a compounding agent to remove scratches by levelling the uneven paint surface. Alternatively, compounding is used to remove a surface layer of oxidised or badly weathered paint in order to reveal fresh underlying paint.

Converter: Co-reactant of the base in a two component coating; often (but not always) transparent, containing only resin and solvent. When the base and converter are mixed in different volumes, the converter quantity is usually listed second, after the base quantity. Converters are often called catalyst, activator or hardener.

Copolymer: In antifouling coatings, an ablative antifouling with the active ingredient bound to the polymer.

Corrosion: Decomposition of a metal in contact with its environment.

Coverage: The area a given unit of paint will cover at a specified thickness.

Curtain Call: The time at which gravity overcomes a coating's film-forming properties resulting in sags or curtains.

Cross-Linking: Method by which polymers unite to form a protective film; the method of cure in two component enamels.

Cure: The process by which paint is converted from the liquid to the solid state.

Curtaining: Sagging.

Cutting: A process of removing an oxidized or damaged surface of the paint and revealing fresh, underlying paint. Also, the act of removing orange peel or surface defects from a new paint application by way of wet sanding.

DA: Dual action sander.

Detailing: To clean, item by item, each minor part of a boat surface to the completeness of the work. Often used as a term to describe minute and precise corrections to and cleaning of a painted surface.

Dew Point: The temperature at which water vapor condenses from the air; the dew point varies with relative humidity.

Distinction of Image (DOI): The quality of the reflection in a high-gloss finish. The mirror effect of the finish.

Dry Film Thickness (DFT): The film thickness of paint after all the solvent has evaporated from the wet paint.

GLOSSARY OF TERMS

Dry Spray: Sprayed paint which loses so much solvent in the air that it becomes too dry to flow out over the surface; dry spray usually has a lower gloss than a properly sprayed surface.

Drying Time: Time interval between application and final cure.

Dry to Handle: Time interval between application and ability to handle without damage.

Dry to Recoat: Time interval between application and ability to receive next coat satisfactorily.

Dry to Touch: Time interval between application and tack-free time.

Enamel: 1. A paint which forms a film by chemical union of its component molecules during cure; 2. In shop terminology, any paint which is not a lacquer.

Epoxy: Type of paint, adhesive or plastic noted for high mechanical strength, good adhesion and resistance to solvents, acids, alkalis, and corrosion. Epoxies do not weather well.

Fairing Compound: Filler putty used to fill surface depressions and shape forms until they are fair or smooth.

Filler Primer: Heavy paint applied to fill holes or other irregularities in a surface prior to topcoating.

Film Build: Dry film thickness characteristics per coat.

Film Thickness Gauge: Device for measuring film thickness above substrate; dry or wet film thickness gauges are available.

Flash Point: The lowest temperature at which a given flammable material will flash if a flame or spark is present.

Flat and Polish: A general process of wet sanding a surface to remove texture or paint film contamination, followed by a process to restore the gloss through use of buffing and polishing compounds.

Fluid Needle: The stop / start valve for fluid flow through the fluid tip.

Fluid Tip: Orifice in a spray gun into which a fluid needle is seated. The paint exits the spray gun at the fluid tip.

Glaze: Product designed to produce a quick high shine. Not as durable as waxes or polymer sealants.

Hiding Power: The ability of a paint to mask the color or pattern of a surface.

High Solids Paint: Coatings that comply with regulations limiting the amount of volatile (organic solvents) materials in their composition. High solids coatings are generally more than 50% solids by volume.

Incompatibility: Inability to mix with, or adhere to, another material.

Induction: The time period required for the mixed base and converter components to cross-link chemically. Products requiring induction periods before application will not perform as designed without this waiting period.

Industrial Fallout / Dry Deposition: Airborne pollutants from heavy industry or railroads which settle onto surfaces and become embedded in the finish. Gradually the particles oxidize and appear as dark specks in the paint. Requires special products and procedures to be removed.

Intercoat Adhesion: The ability of each coat of paint to stick to the preceding coat.

GLOSSARY OF TERMS

Isocyanate Resins: Resins characterized by NCO grouping. Isocyanate resins are used in polyurethane converters. Awlcat #2 and Awlcat #3 contain isocyanate resin.

Lacquer: Traditionally a paint which contains a synthetic resin and forms a film by solvent loss; the film remains susceptible to attack by the same or similar solvents; there is no chemical reaction or curing by the polymer.

Lifting: Softening and raising of an undercoat by application of a topcoat.

Linear Polymer: Polymer containing little or no branching (e.g. high density polyethylene and nitrocellulose of acrylic lacquers).

MDR (Mineral Deposit Remover): An acid-based chemical designed to remove type 1 water spotting. The acid works by helping to dissolve the mineral deposits or salts, calcium, magnesium, and other minerals that may have become hard baked onto the paint surface.

Orbital / Random Orbital: Machine sanding equipment

Osmosis: Transfer of liquid through a paint film or other membrane.

Overspray: Sprayed paint which misses the area being painted and falls upon the surrounding surface.

Paint: Material which, when applied as a liquid to a surface, forms a solid film for the purpose of decoration and/or protection; generally a paint contains a binder(s), solvent(s) and a pigment(s); often other materials are present to give special properties to the paint film (e.g. such additives are rust inhibitors, light stabilizers and softening agents (i.e. plasticizers).

Polyester: Type of paint or plastic containing the chemical group (RCOOCT). Awlgrip Topcoats are made from polyester resins.

Polymers: Poly – meaning many, mer – meaning units; very large molecules built up by the combination of many small molecules; they often consist of many thousands of atoms. Polymers form the backbone or binder of a coating; often called resin.

Polyurethane: Wide range of possible binder systems with unique qualities; the aliphatic type is used for the highest quality enamels. The most durable aliphatic polyurethanes are polyester resins co-reacted with an isocyanate resin. Awlgrip Topcoats are based on this chemistry.

Pot Life: The time after which mixed paint cannot be used.

Primer: Type of paint applied to a surface to increase its compatibility for the topcoat or to improve adhesion or the corrosion resistance of the substrate.

Primer Surfacer: Paint used to prime a surface as well as fill irregularities.

Profile: Surface contour as viewed from the edge.

Reducer: Solvent added to a coating to reduce the viscosity and / or alter the dry time. Often called thinner.

Resin: Material, natural or synthetic, contained in varnishes, lacquers and paints; the film former.

Retarders: A solvent added to a paint to slow down its evaporation rate; retarders are often esters.

Scratch Resistance: The ability of a surface to withstand damage.

Sheeting Out: When rinse water spreads out over a surface in sheets, with no holes, breaks or 'pull backs'. Also known as a water break-free or break-free surface.

GLOSSARY OF TERMS

Solids: The resins, pigments and additives that form the permanent paint film after the volatile (solvents) components have evaporated. The solids content is expressed as a percentage of the total wet mix. Low VOC coatings are often referred to as 'High Solids'.

Solvent: The liquid or blend of liquids used to dissolve or disperse a paint; a true solvent is a single liquid that can dissolve the paint.

Spray Cap: Front enclosure of a spray gun equipped with atomizing air holes.

Tape Time: The minimum time after which tape can be applied to the painted surface.

Tie Coat: An adhesion promoter used between different paint systems where adhesion may be poor.

Viscometer: Device for measuring the viscosity of a liquid. Several types are in use; some measure the time for a bubble to rise, or a ball to fall through a column of liquid. Others measure the time required for a given volume of liquid to drain through a standard size hole in the bottom of a cup.

Viscosity: The property of liquid which enables it to resist flow; a thick liquid such as molasses has a high viscosity.

Wash Primer: Thin, corrosion-inhibiting paint usually chromate pigmented with a polyvinyl butyrate binder.

Wet Edge: Keeping the paint wet enough when it is applied by brush so it can be brushed back into without showing lines or demarcations from one painted area to the next.

Wet Film Thickness (WFT): The thickness of a paint film measured while it is still wet. Wet film thickness must be measured immediately after application before any solvent evaporation and the resultant film shrinkage occur.



AWLGRIP®

MAINTENANCE AND REPAIR

Repairing, Buffing, Polishing and Orbital Cleaning of Awlgrip Finishes

Terminology

- **Repair:** A repair is the act of applying additional paint where paint system damage or down-glossing has occurred. A repair may be a small (localized) area or to a larger surface of a vessel. Repair edges may be blended (with solvents), buffed and polished in or may remain as hard cut lines in discreet areas. Dependent on resin technology.
- **Paint Correction Process:** Typically a 3 stage process: Buffing, Polishing and Sealing. Paint Correction is the process of permanently removing imperfections from a paint finish, such as dust inclusions, minor hazing, down-glossing, and fine texture without the need for sanding and re-application of a coating.
- **Buffing (Compounding):** Buffing is the removal of a thin layer of dull or abraded paint from the coating surface either mechanically or by hand. Buffing uses an abrasive liquid compound to the paint surface in order to abrade away the surface layer and expose underlying fresh paint. Buffing typically comes in the form of aggressive / fast cut compounding, to very fine, micro-scratch only removal. Buffing is often called compounding. Buffing is step 1 of a typical paint correction process.
- **Polishing:** The process by which a very fine abrasive product, either applied by machine polisher or by hand, is applied to smooth out and eliminate the fine scratches and swirls left by the buffing / compounding process. Polishing alone may be used just to remove minor surface imperfections, light oxidation or sometimes type 1 water spots. Polishing is step 2 of a typical paint correction process.
- **Sealing:** This is the act of applying a polymer sealant such as Awlcare to protect the newly corrected paint surface. This effectively becomes a sacrificial protective layer. Polymer sealant application should be applied typically every 2 – 6 months depending on severity of service and UV exposure. Application of a polymer sealant is the 3rd and final step of a paint correction process.
- **Orbital or Hand Cleaning:** A process of gently removing adhered surface deposits by use of an orbital buffer at a very slow speed. The cleaning process is carefully designed only to remove paint surface contaminants including type 1 water spotting, but does not attempt to restore the underlying coating surface through paint removal (buffing or polishing). Awlcare or similarly extremely fine / compound may be used. Use of extremely fine compounds by hand application with a micro-fiber cloth is also acceptable. Orbital cleaning does not replace correct washing and cleaning maintenance processes and should only be conducted when absolutely necessary.

Awlgrip Topcoats: Statement of Reparability

- Awlgrip HDT, Awlcraft 3000, and Awlcraft 2000 (clear and solid colors) areas are buffable and polishable coatings. This means areas that have experienced down-glossing (through chemical damage or UV degradation), light surface abrasion or micro-scratching, may be mechanically buffed and polished in order to remove the paint surface damage and to restore gloss.
- Awlgrip HDT (OC0300 Clear), Awlcraft 3000 (TF0300 Clear), and Awlcraft 2000 (OF3029 Clear) are true repairable coatings, meaning additional coats may be applied and blended, minimizing visual impact. Solid colors need to be individually assessed for suitability for full repair. Age of existing paint, location of visibility of repair, size of repair, and particular color code will all have an impact on final repair visibility.
- Awlgrip Topcoat (G Line) is not a repairable or buffable coating. Gentle orbital cleaning may be conducted by experienced operators to remove surface bonded contaminants. Do not attempt to buff or restore down-glossed paint surfaces with abrasive compounds.
- Awlcraft CS MUST NOT be buffed, polished or protected with a polymer sealant such as Awlcare.

Caution: All solid colors will age with UV exposure and color values will change. Conducting a patch repair on an aged solid color topcoat with fresh paint may result in a visible color difference.

Caution: Some single stage colors (typically whites) of Awlgrip HDT, Awlcraft 3000, and Awlcraft 2000 may be successfully repaired with paint touch ups, and re-blended, but there may be a noticeable appearance change to unrepaired areas as pigments do change color in service.

Caution: It is always advised to check on remaining coating thickness to determine there is enough paint present to buff with abrasive compounds. It is recommend that a topcoat DFT should never fall below the minimum recommended thickness as stated in the product TDS.

Caution: When buffing a solid color, test on a inconspicuous area first to check for an undesirable color change, fade or polish through.

Maintenance Practices: Awlgrip Topcoats Maintenance

DO:

Start the cleaning operation by rinsing down the surface to remove surface contaminants with fresh water prior to applying any of the recommended cleaning materials.

1. Wash the surface with Awlwash 2.0 or Awlwash 73234 and water. Regular cleaning will avoid build-up which can slowly attack the topcoat, prematurely ageing the coating. Use soft, non-abrasive cloths, sponges or washing mitts when washing.
2. Wash only during the cool hours of the day in hot climates. Paint will become softer during the higher temperature times of the day and may become susceptible to chemical damage from cleaning products, especially if allowed to become baked on / dried hard.
3. Awlgrip topcoats (Awlgrip HDT and Awlgrip Topcoat G/H Line): Solvents such as Awlprep OT0008, Awlprep Plus OT0115, toluene, lacquer thinner, M.E.K., acetone, or kerosene may be used to soften or remove heavy build-up of grease and grime, felt tip markings or spray paint on the topcoat. For baked on mineral deposits and salts, Ethyl Alcohol + 20% water dilution is effective. Apply solvents with soft clean cloths. Wipe up solvent quickly. Do not allow solvent to dry on the surface or puddle and soak into the surface. Wash these areas with Awlwash 2.0 / Awlwash and water to remove solvent residue. When using solvents to remove stains, test an inconspicuous area first.
4. Awlcraft 3000 and Awlcraft 2000 only: Use only mild solvents to remove stubborn stains. Awlprep OT0008, mineral spirits, xylene, kerosene and diesel fuel are acceptable for use on Awlcraft 3000 and Awlcraft 2000. Awlgrip topcoat, Awlgrip 3000 and Awlcraft 2000: Apply solvents with soft clean cloths. Wipe up solvent quickly. Do not allow solvent to dry on the surface or puddle and soak into the surface. Wash these areas with Awlwash 2.0 / Awlwash and water to remove solvent residue. When using solvents to remove stains, test an inconspicuous area first.
5. Always thoroughly rinse surfaces with fresh water after cleaning with Awlwash 2.0 / Awlwash or solvents. Latent solvent residue can attack the topcoat, while detergent residue will attract dirt and salts. It is of utmost importance to ensure all trace of detergents are removed from any surface prior to drying.
6. Use distilled white vinegar and hot water to remove stubborn salt stains or some type 1 water spots (mineral deposits). Washing with Awlwash 2.0 / Awlwash after use of vinegar is recommended.
7. Use Awlcare 73240 by hand only to remove mild diesel soot stains. Protecting the surface with Awlcare 73240 will help maintain the gloss of Awlgrip topcoats. Awlcare is a hand applied, non-abrasive, synthetic polymer. When applied regularly, it will remove mild stains, some water spots and diesel soot while increasing resistance to attack from acid rain and other pollutants. It contains no harsh abrasives. Awlcare leaves a non-yellowing, protective polymer coating which lasts through multiple washings. Use Awlcare to temporarily seal and restore gloss to painted surfaces dulled by age or mistreatment.
8. After washing, it is imperative to fully dry the paint surface, including run-off surfaces on deck below. Always show respect and caution for neighboring boats in the case of cleaning water overspray. Large silicon blades are particularly effective for drying large surfaces. A leather chamois cloth or mop is useful – however this must be dedicated for drying after rinsing and 100% free of any detergent residues.

Maintenance Practices: Awlgrip Topcoats Maintenance

DO NOT:

1. Do not use traditional waxes. General: Traditional waxes break down rapidly. The residue can cause the topcoat to appear yellow, plus it attracts dirt. This creates the need to maintain the wax, increasing overall maintenance. Traditional waxes which contain no abrasives probably do little harm to the coating, but offer no benefit. Awlgrip has developed Awlcare Protective Polymer Sealer 73240 for those who want to enhance their finish and need the additional cleaning power of a hand applied, dry wash product. Awlcare is a non-yellowing sealer that will protect both Awlgrip topcoats with regular applications. Hand applied Awlcare will not harm Awlgrip topcoats and can easily be removed with Awlprep Plus OT0115 (or OT0340 Surface Cleaner in Europe) when it is time to repaint.
Awlgrip topcoats: Regular applications of Awlcare will help temporarily seal and restore shine to painted surfaces that have become porous due to age or mistreatment, helping to maintain a satisfactory appearance until there is time to repaint.
Awlgrip HDT, Awlcraft 3000, and Awlcraft 2000 only: Awlcare Protective Polymer Sealer will help maintain the gloss on these topcoats with regular applications, especially those which have been buffed or polished. Remember, Awlcare is only applied and buffed by hand. Never apply or buff Awlcare with a machine.
2. Do not use abrasives, scratch pads or polishing compounds. Scratching the surface gives dirt a place to cling while wearing out the resin layer. Using abrasives of any kind will reduce the overall life of the finish and voids the Awlgrip Limited Warranty.
3. Do not allow contact between the Awlgrip topcoats and teak cleaners. Most teak cleaners contain acids or caustic agents that stain and discolor an Awlgrip topcoats.
4. Do not allow metal polishes to dry on the surface of Awlgrip topcoats. Metal polishes may discolor and stain the painted surface.
5. Metal polishes contain acids. Rainwater and dew running off metal fittings will spread metal polish residue onto the paint surface and will etch and dull the paint finish. Washing freshly polished metal fittings thoroughly with Awlwash 2.0 / Awlwash and water can help eliminate polish residue and reduce the metal polish run off.
6. Do not use strong solvents (e.g. lacquer thinner, M.E.K., acetone) to clean Awlcraft 3000, Awlcraft 2000, Awlbrite Clear or Awlspar varnish.
7. Do not allow wet equipment (e.g. seat cushions, coils of line, sails, sail covers, coolers) to trap and hold moisture against Awlgrip topcoats. This condition can result in blistering or delamination of the Awlgrip topcoats.
8. Do not use acrylic Teflon® coatings over an Awlgrip topcoats finish. Use of these coatings void the Awlgrip Limited Warranty.
9. Do not 'shrink wrap' or tightly bind Awlgrip topcoats with plastic wrappings. The cover system, whether synthetic or natural fiber, should be ventilated to allow the coating system to 'breathe'. Do not pull the cover tight to the surface painted with Awlgrip topcoats. This can trap and hold moisture on the surface, resulting in loss of gloss, blistering, or delamination of the topcoat. Do not allow the cover to chafe against the painted surface, a chafing cover, especially when accompanied by airborne dirt, can abrade the surface and cause premature loss of gloss.

AWLGRIP HDT REPAIR MANUAL

Awlgrip has created a new standard in topcoat appearance and durability: Awlgrip HDT (High Definition Technology). This high performance mirror-like topcoat specifically tailored for use with AkzoNobel toners is not only a high gloss, robust topcoat system but is also repairable and buffable.

Awlgrip HDT is a high performance polyurethane topcoat that combines hardness and micro-scratch resistance with repairability.

Should the need arise to repair your Awlgrip HDT coating system, from the smallest scratch through to a large scale repair, the following manual will take you step-by-step through the preparation, application and finishing of Awlgrip HDT, greatly aiding in the outcome of a successful repair.

It is important that every step in the process is followed as described or the resultant repair will be visible and require repeating.

Note: Some colors may be harder to repair than others. The following instructions and application procedures require a degree of application skill and previous spray application experience.

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1. PREPARATION

As with any application or repair, preparation is a key stage in the process. The area to be repaired, and a large section of area around it, should be thoroughly cleaned and degreased. Be sure all detergent residue is rinsed from the surface. Use **Awlgrip Wipe-Down Solvent** (NA/AP: **Awlprep 400 OT0170**; EU: **Surface Cleaner OT0340**) as a final wipe down of the surface using the Two Cloth Method.

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2. SANDING REPAIR AND SURROUNDING AREA

Sand the repair area, and the surrounding area. For small repairs, <15cm / 6in, sand approximately 5 times the size of the damaged area. For larger repairs, 30-92cm / 12-36in, sand beyond the edge of the damaged area to allow room for the subsequent coats in the remaining steps. Sand the repair area using P400 grit paper, work a second area beyond the P400 with P800 grit, and sand beyond the P800 with P1500 grit out on to the undamaged paint area. Blow off the surface with clean, dry compressed air while dry wiping with clean rags to remove sanding dust and residue. Following removal of the dust and residue, wipe the surface with **Awlgrip Wipe-Down Solvent** (NA/AP: **Awlprep 400 OT0170**; EU: **Surface Cleaner OT0340**) using the Two Cloth Method.

Note: Care must be taken not to cut through the topcoat or other high spots. Hold the DA flat, turn down the air pressure (slow to medium speed), and sand using very light pressure.

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3. APPLICATION OF AWLGRIP HDT

Mix your Awlgrip HDT color as per product data sheet. Apply Awlgrip HDT over the damaged area, covering all of your P400 grit sand scratch on your first coat. Allow to flash off before applying your second coat. The second coat should be applied over your first coat and half way into your P800 grit sand scratch area.

Note: With most colors, you should be able to achieve full opacity in 2 coats, however, certain colors may require 3 coats.

IMPORTANT:

Full coverage and hiding of the damaged area with Awlgrip HDT needs to be achieved before proceeding to step 4.

When applying the Awlgrip HDT color, care should be taken to apply a fully coalesced film, but do not over-apply. Always spray perpendicular to the substrate except when coming to the outer edge of the area being coated, at which point the spray gun should be pivoted away from the substrate to “fade-out” Awlgrip HDT.

4. APPLICATION OF AWLGRIP HDT CLEARCOAT (OC0300)

Prepare a standard mix of Awlgrip HDT Clearcoat (OC0300) once the previous coat of Awlgrip HDT has flashed. Apply Awlgrip HDT Clearcoat as per product data sheet over the Awlgrip HDT color extending out to cover all of your P800 grit sand scratch area.

5. MIXING OF AWLGRIP HDT CLEARCOAT AND AWLGRIP REPAIR TOPCOAT BLENDER (OT0195)

Mix Awlgrip HDT Clearcoat 50:50 by volume with Awlgrip Repair topcoat blender (OT0195), assuming you have enough Awlgrip HDT Clearcoat left after the application of your 1 coat of clear. If not, mix more Awlgrip HDT Clearcoat as per product datasheet.

IMPORTANT:

Use the same tip and aircap as for all previous applications, reduce air pressure and adjust fan and fluid feed for the application.

6. APPLICATION OF BLENDED AWLGRIP HDT CLEARCOAT/ AWLGRIP REPAIR TOPCOAT BLENDER

The 50:50 blend is only intended to be applied to the P1500 grit area, therefore, be prepared to do this while your coat of clear is still wet. Overlap into your coat of clear just enough for full melt in. It is vital that all of the P1500 grit scratch is coated with the 50:50 blend.

IMPORTANT:

Be mindful of where your P1500 grit starts and stops. Try not to over-apply onto unsanded area. However, it is better for the repair if all sand scratches are filled, even if this means a small amount of the 50:50 blend is applied onto the unsanded area.

Apply the 50:50 blend with adjusted fluid feed, fan and air pressure taking care to apply a full film. This is critical otherwise a successful blend will prove nearly impossible.

Carry out step 7 immediately.

7. APPLICATION OF BLENDED AWLGRIP HDT CLEARCOAT/ AWLGRIP REPAIR TOPCOAT BLENDER

While the previous coat is still wet, apply straight (neat) Awlgrip Repair Topcoat Blender (OT0195) starting approximately 5–8cm / 2–3in in from the outer edge of the Awlgrip HDT Clearcoat. Blend (step 6) continuing to apply right over the edge of the clear and to the edge of the unsanded area in order to blend the clear into the existing coating.

IMPORTANT:

Using the same tip and aircap as for all previous applications, reduce air pressure and adjust fluid feed and fan for the application of the pure Awlgrip repair topcoat blender.

As this step involves applying straight solvent, take care to not over-apply or have excessive volumes of solvent on the surface as this could result in defects from the solvent flowing unevenly across the repair area. OT0195 evaporates quite quickly so if multiple coats of Awlgrip repair topcoat blender are needed, wait 30-40 seconds to reapply.

8. FINAL STEPS

The above 7 steps should result in a near-invisible repair that may not require buffing. However, once cured the Awlgrip HDT can be buffed to further blend in the repair. Do not wet sand blended area.

AWLCRAFT SE (Solids and Effects) REPAIR MANUAL

Awlcraft SE is a revolutionary basecoat designed to deliver special effect finishes (metallics, pearls and solid), with a fast drying, high opacity formulation. **Awlcraft SE** basecoat must be clear coated with Awlgrip HDT Clearcoat (OC0300), Awlcraft 3000 Clearcoat (TF0300), or Awlcraft 2000 Clearcoat (OF3029) to provide not only a high gloss, robust topcoat system but also a repairable and buffable system.

Should the need arise to repair your Awlcraft SE Basecoat / Clearcoat system, from the smallest scratch through to a large scale repair, the following manual will take you step-by-step through the preparation, application and finishing of the coating system, greatly aiding in the outcome of a successful repair.

It is important that all the steps in the process are followed as described or the resultant repair will be visible and require repeating.

Note: Some colors may be harder to repair than others. The following instructions and application procedures require a degree of application skill and previous spray application experience.

1. PREPARATION

As with any application or repair, preparation is a key stage in the process. The area to be repaired, and a large section of area around it, should be thoroughly cleaned and degreased. Be sure all detergent residue is rinsed from the surface. Use **Awlgrip Wipe-Down Solvent** (NA/AP: **Awlprep 400 OT0170**; EU: **Surface Cleaner OT0340**) as a final wipe down of the surface using the Two Cloth Method.

2. SANDING REPAIR AND SURROUNDING AREA

Sand the repair area, and the surrounding area. For small repairs, <15cm / 6in, sand approximately 5 times the size of the damaged area. For larger repairs, sand 30-92cm / 12-36in beyond the edge of the damaged area to allow room for the subsequent coats in the remaining steps.

Note: If repairing a metallic system, allow a minimum of 8 times the size of the damaged area for the full repair; if repairing a pearlescent system allow a minimum of 10 times the size of the damaged area for the full repair.

Sand the repair area using P400 grit paper, work a second area beyond the P400 with P800 grit, and sand beyond the P800 with P1500 grit out on to the undamaged paint area. Blow off the surface with clean, dry compressed air while dry wiping with clean rags to remove sanding dust and residue. Following removal of the dust and residue, wipe the surface with Awlgrip Wipe-Down Solvent (NA/AP: **Awlprep 400 OT0170**; EU: **Surface Cleaner OT0340**) using the Two Cloth Method.

Note: Care must be taken not to cut through the topcoat or other high spots. Hold the DA flat, turn down the air pressure (slow to medium speed), and sand using very light pressure.

3. APPLICATION OF AWLGRIP REPAIR BASECOAT FOUNDATION COAT (OE3001)

Apply **Awlgrip Repair Basecoat Foundation Coat** (OE3001) over the repair area and to approximately 90-95% of the size of the total sanded area.

Note: The basecoat foundation coat does not need to be mixed with reducer or converter prior to application.

It is recommended to use a gravity gun setup, (tip size: 1 .2 - 1 .3mm / 0 .047 - 0.051in), to apply the basecoat foundation coat and a lower atomizing pressure than would be used for applying the standard **Awlcraft SE** mix.

TIP:

Using disposable spray pots, with all the necessary mixed products already pre-filled into them, will make the job easier and faster. Simply switch between the disposable pots as necessary at each step of the repair.

4. APPLICATION OF AWLCRAFT SE BASECOAT (STANDARD PRODUCT)

Once the **Awlgrip Repair basecoat** foundation coat has dried, mix standard **Awlcraft SE Basecoat** as per product datasheet. Apply **Awlcraft SE Basecoat** over the damaged area only as per normal Awlcraft SE application techniques.

IMPORTANT:

Full coverage and hide of the damaged area with the Awlcraft SE Basecoat needs to be achieved before proceeding to step 5.

When applying the Awlcraft SE Basecoat care should be taken to apply a fully coalesced film, but not over-apply. Always spray perpendicular to the substrate except when coming to the outer edge of the area being coated at which point the spray gun should be slowly pivoted away from the substrate to “fade-out” the Awlcraft SE Basecoat.

This is one of the crucial steps in the whole repair process and is vital for obtaining an invisible repair. Care must be taken during the application process.

5A. MIXING OF AWLCRAFT SE BASECOAT WITH AWLGRIP REPAIR BASECOAT BLENDER (OT0190) OR AWLCRAFT SE BASECOAT WITH AWLCRAFT SE PEARL MID-COAT

Choose ONE of the following options:

Note: Not all colors will require the following steps.

TWO STAGE REPAIR – FOR MOST METALLIC SYSTEMS:

Firstly, prepare a normal mix of standard **Awlcraft SE Basecoat** as per product datasheet, but instead use a slower solvent than would typically be selected for **Awlcraft SE Basecoat** applications. For example, if the typical choice is **OT0001 Fast Spray Solvent**, then instead select **OT0003 Standard Spray Reducer** for the mix reducers for your application conditions. Once ready, mix 50:50 by volume with **Awlgrip Repair Basecoat Blender (OT0190)**.

THREE STAGE REPAIR – FOR PEARL SYSTEMS ONLY:

Awlcraft SE Basecoat (mixed as per datasheet) with **Awlcraft SE Pearl Mid-coat** (mixed as per datasheet) allows for easier blending of the base repairs.

Mix 100:50 by volume, or when the base becomes translucent on a 3 second runoff on a mixing stick, of **Awlcraft SE Basecoat** mix with **Awlcraft SE Pearl Mid-coat** mix.

5B. APPLICATION OF AWLCRAFT SE BASECOAT BLENDED WITH AWLGRIp REPAIR BASECOAT BLENDER (OTO190) OR AWLCRAFT SE BASECOAT WITH AWLCRAFT SE PEARL MID-COAT

Once the **Awlcraft SE Basecoat** has flashed off, apply the mixed **Awlcraft SE Basecoat/Awlgrip Repair Basecoat Blender** (OT0190) over the previously applied area (step 4) and slightly further out. Care should be taken to not apply the mix over the whole of the previously applied **Awlgrip Repair Basecoat Foundation Coat**. Depending on size of the damaged area, apply the mix from between 50-90% of the basecoat foundation coat area. Apply the blend as per normal Awlcraft SE application techniques taking care to apply a fully coalesced film, but do not over-apply. Always spray perpendicular to the substrate, except when coming to the outer edge of the area being coated at which point the spray gun should be pivoted away from the substrate to “fade-out” the blended **Awlcraft SE Basecoat**.

Note: The application of the blended **Awlcraft SE Basecoat/ Awlgrip Repair Basecoat Blender** **MUST NOT** extend beyond the area coated with OE3001 Basecoat Foundation coat.

IMPORTANT:

If you are working on a Two Stage Repair, skip step 6 (related to applying Pearl Systems) and proceed to step 7.

TIP:

For best results, we strongly suggest the use of “Let Down Panels” prior to step 6.

6. APPLICATION OF PEARL COATS

1. Apply the first coat to the entire repair area to the outermost edges of your repair but still well within the OE3001 Basecoat Foundation coat.
2. Apply the second coat of pearl to approximately 50% of the first coat of pearl.
3. Apply the third coat of pearl to approximately 75% of the first coat (in between coats 1 and 2).
4. Depending on the effect desired, apply the fourth coat of pearl to approximately 90% of the first coat applied (between the 1st and 3rd coat).

IMPORTANT:

It is critical that, once the basecoat has thoroughly dried, the entire repair area is wiped with a tack cloth. Avoid tacking the unsanded paint adjacent to your repair area.

7. APPLICATION OF BLENDED CLEARCOAT- AWLGRIP HDT CLEAR [OC0300], AWLCRAFT 3000 [TF0300], OR AWLCRAFT 2000 [OF3029]

1. Prepare a standard mix of Clearcoat. Apply the first coat of clear over the entire OE3001 Awlgrip Repair Basecoat Foundation coat applied in step 3 (where the OE3001 meets the P800 grit sand scratch).
2. Apply the second coat of clear over the entire first coat and out to where the P800 grit meets the P1500 grit. Apply the **Awlgrip HDT Clearcoat, Awlcraft 3000 Clearcoat, and Awlcraft 2000 Clearcoat** as per datasheet taking care to apply a full film.

IMPORTANT:

Step 8 must be carried out immediately while your second coat of clear applied in step 7 is still wet.

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8. MIXING OF AWLGRIP HDT, AWLCRAFT 3000, AWLCRAFT 2000 CLEARCOAT AND AWLGRIP REPAIR TOPCOAT BLENDER [OT0195]

Take your standard mix of Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 Clearcoat and mix 50:50 by volume with **Awlgrip Repair Topcoat Blender** (OT0195).

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9. APPLICATION OF BLENDED AWLGRIP HDT, AWLCRAFT 3000, OR AWLCRAFT 2000 CLEARCOAT / AWLGRIP REPAIR TOPCOAT BLENDER

The 50:50 blend is only intended to be applied to the P1500 grit area, therefore, be prepared to do this while your coat of clear is still wet. Overlap into your coat of clear just enough for full melt in. It is vital that all of the P1500 grit scratch is coated with the 50:50 blend.

IMPORTANT:

This is also a crucial step in the repair process and is vital for obtaining an invisible repair. Care must be taken to not over-apply the 50:50 blend onto the unsanded surface.

However, it is critical that all P1500 grit scratch is coated with the 50:50 mix. If this occurs, the whole repair process will need to be repeated.

Carry out step 10 immediately.

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10. BLENDING OF AWLGRIP HDT, AWLCRAFT 3000, OR AWLCRAFT 2000 CLEARCOAT WITH EXISTING FINISH

While the previous coat is still wet, apply straight (neat) **Awlgrip Repair Topcoat Blender** (OT0195) starting approximately 5–8cm / 2–3in, in from the outer edge of the **Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 Clearcoat Blend** (step 9) continuing to apply right over the edge of the clear and to the edge of the sanded area in order to blend the clear into the existing coating.

IMPORTANT:

Using the same tip and aircap as for all previous applications, reduce air pressure and fluid feed for the application of the pure **Awlgrip Repair Topcoat Blender**.

As this step involves applying straight solvent, take care to not over-apply or have excessive volumes of solvent on the surface as this could result in defects from the solvent flowing unevenly across the repair area. The product needs to be applied wet, so also make sure it's not applied too dry for the blending to work. It's about finding the right balance. If necessary, multiple coats of OT0195 can be applied to aid in melting in the edge of the repair. However, time must be given (approximately 15-20 seconds at 25°C / 77°F in between coats of OT0195 to avoid over-application.

11. FINAL STEPS

The above 10 steps should result in a near-invisible repair that may not require buffing. However, once cured the Awlgrip HDT, Awlcraft 3000, or Awlcraft 2000 Clearcoat can be buffed to further blend in the repair.

Note: Wet sanding is usually not required and whenever possible should be avoided.

COLOR MATCHING TIPS:

Using test panels for color matching.

TWO STAGE REPAIR:

Spray a panel the same way as how you would when the boat was originally done, except add more coats of metallic covering with each coat as you go along, then unmask and clear the whole panel.

By comparing the panel to the original paint job, it will give you a good idea of how many coats of metallic it will require. For example, if two coats were originally used on the boat, it may take three to get a match, which you would not know without a step panel.

THREE STAGE REPAIR: Technical Basics: Let Down Panels

"Let Down" Panels can be utilized as an aid to determine the approximate number of mid-coat layers needed to achieve a color match when matching three stage paints. By comparing the various layers of mid-coat on the let down panel to an adjacent panel on the boat, a guide for the mid-coat application can be determined.

IMPORTANT:

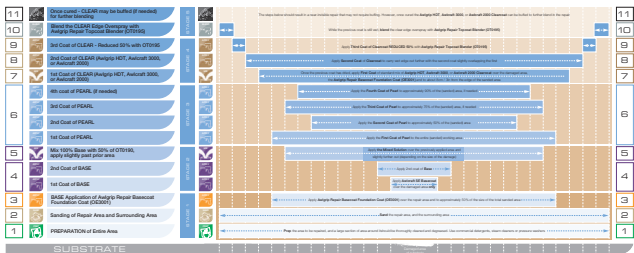
Air pressure and fluid feed will affect the final color, so need to be controlled and fine tuned before application.

"LET DOWN" PANEL PREPARATION:

1. Apply basecoat foundation color to hiding, then let flash / dry
2. Mask off panel in approximately six equal segments to illustrate film build variations
3. Apply one single coat of mid-coat
4. Remove the 1st section of masking paper, then:
5. Apply another single coat of mid-coat
6. Repeat above steps until complete panel has been sprayed with the pearl / mid-coat
7. Flash / dry for 20 minutes, mask off ½ of panel length-wise and apply Awlgrip HDT, Awlcraft 3000, or Awlgrip 2000 Clearcoat over unmasked side of panel
8. Lastly, compare the different shades on the let down panel to the finish and use the appropriate number of pearl coats to reach the desired color.

AWLCRAFT SE REPAIR SYSTEM
3 STAGE - PEARL / CANDY

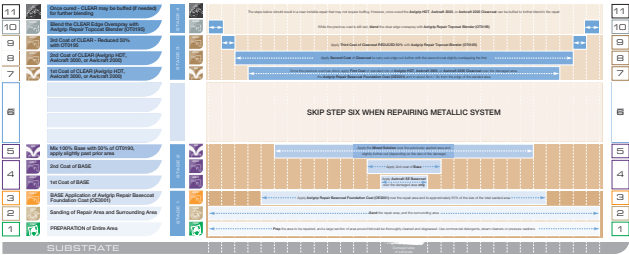
Note: All repairs should be checked with the appropriate sun gun before moving on to the clearcoat to check for visual imperfections.



[CLICK HERE TO SEE TABLE AT FULL SIZE](#)

AWLCRAFT SE REPAIR SYSTEM
2 STAGE - METALLIC

Note: All repairs should be checked with the appropriate run gun before moving on to the clearcoat to check for visual imperfections.



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