

# APEXIOR<sup>®</sup> No 1

Coating For Hot Wet Metal Surfaces

**PC 900**

## FEATURES

- THE RECOMMENDED COATING FOR BOILER TUBES AND TIMBER KILNS
- PERFORMANCE FROM 95°C TO 540°C
- SIMPLE ONE PACK BRUSH APPLICATION PROCEDURE
- SELF PRIMING TOPCOAT
- IDEAL COATING FOR USE UNDER HOT INSULATION WHEN MOISTURE IS PRESENT

## USES

APEXIOR<sup>®</sup> No 1 is the standard remedy for the protection of "hot wet" metal surfaces subjected to temperatures between 95°C – 540°C. It is based on an amorphous carbon prepared in an electric furnace which, combined with a neutral organic vehicle, provides a coating that is less soluble in boiler water than the metal itself. The APEXIOR<sup>®</sup> No 1 film creates a barrier that insulates the metal from boiler water or steam. Contact with impurities in the boiler feed water (which would normally cause corrosion and scale) is prevented; the APEXIOR<sup>®</sup> No 1 film being inert cannot be damaged. The advantage is twofold - boilers can be cleaned in a fraction of the time usually taken, since the scale comes away over large areas by light tapping and chipping hammers can frequently be discarded. Light tapping eliminates all danger of damage to boilerplates. The second advantage is, of course, in respect of fuel economy, owing to the better operating conditions. Boilers that are regularly treated never carry the same thickness of scale as formerly and require less fuel to maintain the same standard. APEXIOR<sup>®</sup> No 1 coated surfaces are, therefore, maintained in a perfect state of preservation. Because it imparts neither taste, taint nor smell to boiler feed water, APEXIOR<sup>®</sup> No 1 is of special interest in breweries, milk factories, hotels, hospitals, chocolate factories, food processing plants, sugar refineries or wherever absolute purity of the finished product is essential. When a boiler which is coated with APEXIOR<sup>®</sup> No 1 is first taken off the line and opened up for inspection, there maybe deposit, usually of a brown colour, on the internal surfaces which to the inexperienced eye might denote that APEXIOR<sup>®</sup> No 1 has failed to remain intact. This is not true. The brown appearance is due merely to a deposit on the surface of the APEXIOR<sup>®</sup> No 1 from the boiler water. The exact shade of this deposit depends, of course, on feed water conditions. It may be a red or brown colour, or in some cases, grey or yellowish. With some waters, the deposits will be dense and fairly adherent; in others, it will be in the nature of a sludge that, due to its chemical constituents, forms a light powder when dry. Usually such deposits are easily removed by brushing the surface with a wire brush. The result is a shiny black surface. This is not the bare metal; it is the APEXIOR<sup>®</sup> No 1 which, although it has been hidden, has been there all the time and has been constantly on the job maintaining the condition of the metal.

## SPECIFICATIONS

### GENERAL CHARACTERISTICS

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| (a) Heat and electricity conducting.   | (e) Reduces boiler scale formation.                      |
| (b) Indestructible by wet heat up to 535°C.  | (f) Reduces caustic cracking.                            |
| (c) Inert and insoluble in boiler water.   | (g) Does not cause frothing or boiler priming.           |
| (d) Sufficiently elastic to conform to all expansion and contraction encountered in steam raising plant. | (h) Imparts neither taint, taste nor smell to the water. |
|  | (i) Improves heat transmission.                          |

### TYPICAL PROPERTIES AND APPLICATION DATA

<b>CLASSIFICATION</b>	Boiler coating	<b>APPLICATION CONDITIONS</b>	Min	Max
<b>FINISH</b>	Matt	Air Temperature	5°C	45°C
<b>COLOUR</b>	Dark Grey	Substrate Surface Temperature	5°C	45°C
<b>COMPONENTS</b>	One	Relative Humidity		85%
<b>SOLIDS BY VOLUME</b>	34%		Recom.	
<b>VOC LEVEL</b>	<530 g/L	Wet film per coat (microns)		105
<b>FLASH POINT</b>	43°C	Dry film per coat (microns)		35
<b>POT LIFE</b>	Not applicable	<b>SUITABLE SUBSTRATES</b>	Abrasive blast cleaned, hand cleaned or power tool cleaned steel.	
<b>MIXING RATIO (V/V)</b>	Single pack	<b>APPLICATION METHODS</b>	Brush.	
<b>THINNER</b>	Mineral Turpentine			
<b>PRODUCT CODE</b>	230-63079			

Drying characteristics at 35 microns dry film thickness

Temperature	Humidity	Touch	Handle	Full Cure	Overcoat	
					Min	Max
25° C	50%	4 Hours	Not Applicable	12 Hours	8 Hours	Indefinite

These figures are given as a guide only, as ventilation, film thickness, humidity, thinning and other factors will influence the rate of drying.

### TYPICAL SPREADING RATE AT RECOMMENDED DRY FILM BUILD

A spreading rate of 9.7 sq. metres per litre corresponds to 35 microns dry film thickness assuming no losses. Practical spreading rates will vary depending on such factors as method and conditions of application and surface roughness.

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## TYPICAL SYSTEMS

(The typical systems are offered as a guide only and are not to be used as a specification. It is recommended that the specific needs of a project be discussed with a Dulux Protective Coatings Consultant.)

SURFACE	PREPARATION GUIDE	SYSTEM		DRY FILM THICKNESS
STEEL	Hand or Power tool clean AS1627.2 St 3 Abrasive blast AS1627.4 Class 2	1st Coat	APEXIOR® No 1	35 Microns
		2nd Coat	APEXIOR® No 1	35 Microns
		3rd Coat	APEXIOR® No 1 (Optional)	35 Microns

**SURFACE PREPARATION** Round off all rough welds, sharp edges and remove weld spatter. Remove grease, oil and other contaminants in accordance with AS1627.1. Rust, millscale and oxide deposits on metal surfaces should be removed by hand or power tool (AS1627.2 St 3) cleaning as a minimum. Coating performance is proportional to the degree of surface preparation and abrasive blast cleaning to a minimum AS1627.4 Class 2 is preferred. Remove all dust by brushing or vacuum cleaning.

**APPLICATION** Stir each can thoroughly until the contents are uniform. Use of a power mixer is recommended. Remix thoroughly before using and continue mixing during application. It is of utmost importance that no sediment should be left in the bottom of the container, as this solid matter is a vital part of the compound.

**BRUSH/ROLLER** Roller not recommended.  
Use a perfectly clean brush for stippling well into the surface. Do not lay it on like paint. The object is to produce a thin thoroughly adherent film on the surface and not an uneven mass of material. Adequate drying time must be allowed between coats and at least 12 hours should elapse after the application of the final coat before subjecting to steam conditions. Do not use synthetic bristle brushes.

**CONVENTIONAL SPRAY** Not Recommended.

**AIRLESS SPRAY** Not Recommended.

**BOILERS NOT UNDER STEAM** During lay-up, boilers are particularly susceptible to corrosion. However, complete protection of the interior surfaces may be achieved by the application of APEXIOR® No 1 and the adoption of one of the following methods:

- After application of two coats of APEXIOR® No 1 and when the film has dried, hold boiler equipment open and dry with free air circulation.
- An alternative procedure is to place trays of unslaked lime in boiler drums and replace all manhole covers and manhole caps; close tightly all valves and connections to exclude moisture. Lime pans should be inspected every 60 days and lime renewed as necessary. 34 kg of lime is sufficient for 200 sq. metres of heating surface; unslaked lime will absorb 33-1/3% of its own weight.

**PRECAUTIONS** This is an industrial product designed for use by experienced Protective Coating applicators. Where conditions may require variation from the recommendations on this Product Data Sheet contact your nearest Dulux® representative for advice prior to painting. Do not apply in conditions outside the parameters stated in this document without the express written consent of Dulux® Australia. Do not apply at temperatures below 4°C. Do not apply at relative humidity above 85% or when the surface is less than 3°C above the dewpoint. Air should be forced through the boiler tubes or tanks so that a complete change of air takes place. It is of utmost importance that no sediment should be left in the bottom of the container, as this solid matter is a vital part of the compound. A water immersion temperature of 93°C must be achieved for the coating system to withstand water temperature below 93°C.

**CLEAN UP** Clean all equipment with mineral turpentine immediately after use.

**OVERCOATING** Power tool clean to remove all rust and scale and then wash to remove surface contamination. The surface must be free of oil, grease and other contaminants.

**SAFETY PRECAUTIONS** **Read Data Sheet, Material Safety Data Sheet and any precautionary labels on containers.**

**STORAGE** Store as required for a flammable liquid Class 3 in a bonded area under cover. Store in well-ventilated area away from sources of heat or ignition. Keep containers closed at all times.

**HANDLING** As with any chemical, ingestion, inhalation and prolonged or repeated skin contact should be avoided by good occupational work practice. Eye protection approved to AS1337 should be worn where there is a risk of splashes entering the eyes. Always wash hands before smoking, eating, drinking or using the toilet.

**USING** Use with good ventilation and avoid inhalation of spray mists and fumes. If risk of inhalation of spray mists exists, wear combined organic vapour/particulate respirator. When spray painting, users should comply with the provisions of the respective State Spray Painting Regulations.

**FLAMMABILITY** This product is flammable. All sources of ignition must be eliminated in, or near the working area. DO NOT SMOKE. Fight fire with foam, CO<sub>2</sub> or dry chemical powder. On burning will emit toxic fumes.

**WELDING** Avoid inhalation of fumes if welding surfaces coated with this paint. Grind off coating before welding.

**MATERIAL SAFETY DATA SHEET is available from Customer Service (132377) or [www.duluxprotectivecoatings.com.au](http://www.duluxprotectivecoatings.com.au)**

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PACKAGING Available in 3.79 litre containers  
TRANSPORTATION WEIGHT 1.09 kg/litre  
DANGEROUS GOODS Class 3 UN 1263

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