

## Jotapipe IL 6003

### PRODUCT DESCRIPTION

This product is a high glass transition temperature ( $T_g$ ) fusion-bonded epoxy coating designed for the protection of the internal surface of drill pipe, down-hole tubing and casing used in harsh and aggressive service environments up to 150°C (302°F). Applied over Jotapipe PR 460, the product provides excellent resistance to corrosive gases and highly abrasive media at elevated temperatures. Jotapipe IL 6003 is available in two reactivities to suite application on various pipe diameters.

### POWDER PROPERTIES

Property	Standard	Result
<b>Gel time</b>	ISO 8130-6 200 °C (392 °F) Jotapipe IL 6003 60S Jotapipe IL 6003 120S	48-72 seconds 90-140 seconds
<b>Moisture content</b>	CSA-Z245.20 (12.4B)	Below 0.50 % (at time of manufacture)
<b>Particle size</b>	CSA-Z245.20 (12.5)	0.2 % max retained on 250 µm (60 mesh)
<b>Density</b>	CSA-Z245.20 (12.6)	1570 ± 50 g/l
<b>Thermal characteristics</b>	CSA-Z245.20 (12.7)* Inflection point	$T_{g1}$ = 40-55 °C (104-131 °F) $T_{g2}$ = 145-160 °C (293-320°F ) $\Delta H$ = 90-125 J/g

\* Powder DSC heating cycles, 20 °C/min: 30-70 °C (conditioning), 30-300 °C under inert gas, ( $T_{g1}$  and  $\Delta H$ ), 30-185 °C ( $T_{g2}$ ). Cured film DSC heating cycles , 20 °C/min: 30-160 °C hold 1.5 min (conditioning), 30-285 °C ( $T_{g3}$ ), 30-185 °C ( $T_{g4}$ ).

### Storage

When stored at a maximum 25 °C (77 °F), a shelf life of 6 months is obtained from the date of manufacture.

### APPLICATION

#### Powder application

Surface preparation meeting Sa 2½ to Sa 3 with a surface profile of 40-100 µm is recommended.

This product is typically applied over Jotapipe PR 460.

Pre-heat time depends on factors such as plant configuration and pipe characteristics.

Application conditions	Typical application temperature	Typical film thickness
<b>Typical application</b>	160-180 °C (320-356 °F)	250-400 µm (10-16 mils)

Coated items shall be post cured at a temperature of 200-220 °C (392-428 °F) for minimum of 35 minutes. Optimum duration of post cure for different wall thicknesses shall be determined by the applicator and full cure shall be confirmed by a DSC cure test.

For specific data on the phenolic primer, refer to the Technical Data Sheet for Jotapipe PR 460. Please refer to the relevant Application Guide for guidelines on the factory application of this product.

## PERFORMANCE

Property	Standard	Result
<b>Abrasion resistance</b>	ASTM D4060 CS-17 wheel, 1000 cycles 1 kg load	0.0135 g weight loss
<b>Autoclave test*</b>	<b>Saudi Aramco 90-SAMSS-091</b>  3000 psi for 24 h at 95 °C, decompression in 3 min at 90 °C  Test A: Treated sea water (ASTM D1141 stock solution 1+2), 100 % N <sub>2</sub>  Test B: Brine, 3 mole % CO <sub>2</sub> , 3 mole % H <sub>2</sub> S, 94 mole % CH <sub>4</sub>  Test C: Wasia water, 100 % CO <sub>2</sub>  <b>Russian Institute:</b> 5 % NaCl, 100 % CO <sub>2</sub> , 950 psi for 24 hours at 120 °C – Pressure release at 120 °C in 5 seconds	Pass, no blistering or delamination  Pass, no blistering or delamination  Pass, no blistering or delamination  Pass, no blistering or delamination
<b>Adhesion*</b>	CSA-Z245.20 (12.14) 28 days, 95 °C (203 °F)	Rating 1
<b>Cure test**</b>	CSA-Z245.20 (12.7)	ΔT <sub>g</sub> of ±3 °C is considered as full cure
<b>Flexibility</b>	CSA-Z245.20-10 (12.11) 1.0 ° PPD at -30 °C (-22 °F)	Pass

\* The performance of the coating is based on 250-400 μm thick film applied over Jotapipe PR 460. 6 mm steel plates were used. These are typical results and should not be viewed as a product specification.

\*\* Powder DSC heating cycles, 20 °C/min: 30-70 °C (conditioning), 30-300 °C under inert gas, (T<sub>g1</sub> and ΔH), 30-185 °C (T<sub>g2</sub>). Cured film DSC heating cycles, 20 °C/min: 30-160 °C hold 1.5 min (conditioning), 30-285 °C (T<sub>g3</sub>), 30-185 °C (T<sub>g4</sub>).

## Disclaimer

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.

# Technical Data Sheet

## Jotapipe IL 6003

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