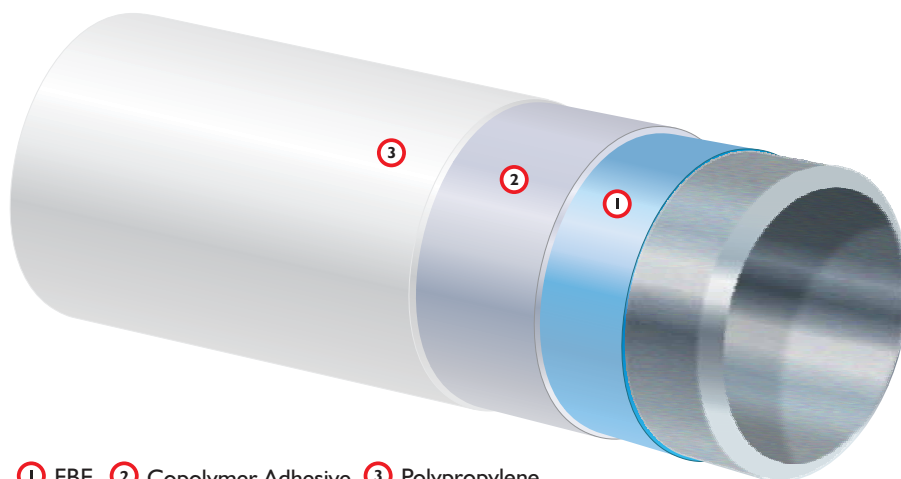


# ARABIAN PIPECOATING COMPANY

## 3LPP

### Three Layer Polypropylene Coating



① FBE ② Copolymer Adhesive ③ Polypropylene

#### PRODUCT DESCRIPTION

This anti-corrosion system consists of a high performance fusion bonded epoxy (FBE) followed by a copolymer adhesive and an outer layer of polypropylene which provides the toughest, most durable pipe coating solution available. 3LPP Systems provide excellent pipeline protection for small and large diameter pipelines with moderate operating temperatures.

#### FEATURES AND BENEFITS

##### High Temperature Corrosion Protection

The FBE component of the 3LPP System provides excellent adhesion to steel, thereby providing superior long term corrosion resistance and protection of pipelines operating at high temperatures. The superior adhesion properties of the FBE also results in excellent resistance to cathodic disbondment which reduces the total cost of cathodic protection during the operation of the pipeline.

##### Engineered Solutions

Advanced manufacturing techniques allow the 3LPP System to be customized to your specific project. The system can be applied to various pipe diameters from 51 mm (2") to over 2032 mm (80"). 3LPP System can also be applied in a

wide range of thicknesses to cost effectively meet unique project specifications and performance requirements.

##### Excellent Mechanical Protection

The tough outer layer of polypropylene protects pipelines during transportation and installation from abrasion and mechanical damage thereby reducing costly repairs. When the pipeline is laid in-ground the polypropylene layer protects against shear forces, moisture ingress, chemical exposure of the FBE and abrasive soil conditions. By increasing the thickness of the polypropylene outer layer, the 3LPP System can provide the highest level of mechanical protection across many diverse environments without requiring the use of costly select backfill.

#### PRODUCT DATA SHEET



Oil & Gas pipelines



Large diameter pipelines



Small diameter pipelines



High operating temperatures



High abrasion environments

#### PARTIAL PROJECT LIST

PROJECT	LENGTH (km)	DIAMETER (")	LOCATION	YEAR
Saudi Aramco Sea Water Transfer Line to UWIPS-3	35.7	42	Saudi Arabia	2006
Dodsal Inter Refineries Pipeline for Takreer	726.3	10, 12, 16	UAE	2005-06
Technip North East Bab, UAE	100.8	4, 6, 8, 10	UAE	2004-05
Saudi Aramco Khuff Gas Pipelines	135.9	6 - 16	Saudi Arabia	2000



## 3LPP



### APCO Offices

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### APCO Plants

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## TYPICAL PLANT CAPABILITIES

PROPERTY	Typical Value
Minimum Pipe Diameter	51 mm (2")
Maximum Pipe Diameter	2133 mm (84")
Minimum Pipe Length	10.5 m (34')
Maximum Pipe Length	26 m (85')
Residual Surface Chlorides	< 15 mg/m <sup>2</sup>
Compressed Air Supply	No Moisture / No Oil
Acid Wash	Yes
Surface Profile	> 85 microns
Surface Finish	Near White Metal Sa2½

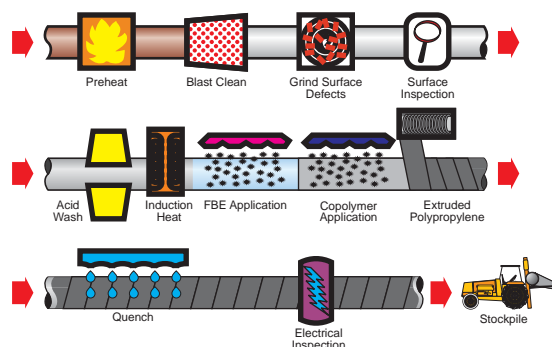
## TYPICAL COATING PROPERTIES

PROPERTY	3LPP		
Minimum Recommended Operating Temperature	-40°C (-40°F)		
Maximum Recommended Operating Temperature	110°C (230°F)		
PROPERTY	Test Standard	Temperature	Test Results
Flexibility 2% strain 3% strain		0°C 20°C	No cracks/ No holidays No cracks/ No holidays
Peel Resistance 80 N/cm Required 40 N/cm Required	DIN 30678	90°C 110°C	> 220 N/cm > 150 N/cm
Impact Resistance 5 J/mm Required	DIN 30678	0°C 50°C	(30 Impacts @ 5 J /mm) Pass Pass
Penetration Resistance 0.45mm Required	DIN 30678	110°C	< 0.26 mm
Coating Resistivity > 108 Ωm Required	DIN 30678		> 1016 Ωm
Elongation > 300%	DIN 30678		% Elongation > 1400%
Air Entrapment Test			Rating I – No Air
MFR Polyethylene Copolymer	ISO 1133 @ 190°C		0.8 g/10min 8.1 g/10min

## APPROVALS / INTERNATIONAL STANDARD

- CSA Z245.21
- DIN 30678 NF
- ISO 9001:2015
- ADCO
- DIN 30670
- A49-71 I
- DEP.31.40.36.31

## PRODUCT APPLICATION PROCESS



www.apco-coating.com