

ADMER™ Steel Pipe Coating Grade: QF551A & QB520A

u General

ADMER™ QF551A and QB520A are a modified polypropylene based with an anhydride group and designed for bonding to steel pipes with polypropylene.

QB520A is a standard grade, and QF551A is an advanced grade.

u Process

Proper surface preparation is important to obtain the best possible adhesion. The cleaner the surface is, the better adhesion obtained under same conditions.

Prior to blasting, the pipe should be degreased and remove rust and dust. After blasting, a chemical treatment may be used i.e. chromate or phosphate treatment to enhance the quality of adhesion.

Then preheat the pipe by gas oven or induction coil up to at least 150 C, typically 170-220 C.

In case of 3 layer system, epoxy powder is coated as primer continuously at the time.

ADMER™ can be processed in a co-extrude with polyethylene with circular die for middle or small diameter steel pipes, and with flat die for larger diameter steel pipes. (wrapping)

Following temperature profile for ADMER™ is recommendable;

C1	C2	C3	C4	AD	Die
180-200C	180-200C	200-230C	200-230C	200-230C	200-230C
(355-390F	355-390F	390-445F	390-445F	390-445F	390-445F)

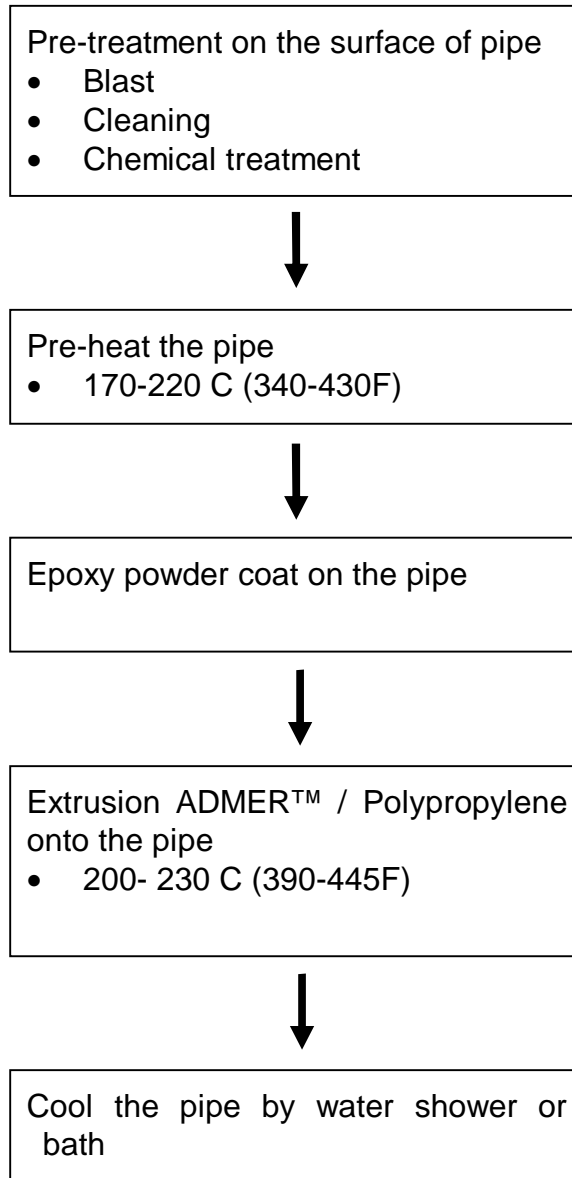
*Maximum temperature; 270C or 540F, Minimum temperature; 200C or 390F

To obtain sufficient adhesion level, 200 +/- 50 microns of thickness is recommendable.

Polypropylene is also extruded with ADMER™ by co-extrusion in circular die process or coated by flat die by side of ADMER™.

Then the pipe should be cooled down by water shower or bath to appropriate temperature.

u Process flow



u Adhesion performance

Steel pipe coating tests were carried out under the following conditions.

Table 2 shows the adhesive performance without epoxy primer by different preheating temperature.

Steel pipe :SGP15A blasted
 Primer :no use
 Construction :ADMER™/HDPE=0.3/1.7mm
 Coating speed :10 m/min
 Extrusion temperature (setting temperature)

Table 1

	C ₁	C ₂	C ₃	H	AD	D ₁	D ₂
60mm EXT(PP)	180	200	230	230	-		
						230	230
40mm EXT(AD)	180	200	230	-	230		

(1) Adhesion performance of primer coated pipe (without primer)

Table 2

Adhesive performance by different preheating temperature
 [N/10mm]

Preheating (C)	QB520A	QF551A
80	No adhesion	No adhesion
100	90	150
120	200	300
150	200	300

u Properties

ITEM	TESTING METHOD	UNIT	QF551A	QB520A
MFR(190°C)	ASTM D1238	g/10min	4.7	2.2
Density	D1505	g/cm ³	0.89	0.90
Stress at yield point	D638	MPa	18	23
Tensile strength at break	D638	MPa	25	25
Elongation at break	D638	%	>500	>500
Izod impact strength	D256	J/m	No Break	480
Shore hardness	D2240	D-scale	60	67
Vicat softening point	D1525	°C	118	145

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