STEELSTOP EPOXY AIRLESS S.F. 1100

Code: 59067 Base - 59068 Hardener

NATURE AND USE - *Steelstop Epoxy Airless S.F. 1100 is a two component solvent free epoxy coating studied to give steel substrates a protection (barrier action) from corrosion. Its solvent free formulation, allows safety in application in closed areas or where flammable vapours have to be avoided. Particularly suggested for the maintenance or for the coating of new off-shore structures. The product can be externally applied at a dry film thickness of 1500 - 2000 µm on pipes, elbows, valves, special pieces, tanks to be laid underground, into sea water or for splash-zone exercise, etc.Its particular consistency allows its application at lower pressure than normally used for this type of products, reducing air entrapment inside the film.*
Its permeability to water is very low and the resistance to cathodic disbonding is good, for these reasons the product is specially used for application in submarine environment (sea-lines, etc …). The coating guarantees a good mechanical resistance to abrasion, to impact and good chemical resistance even in industrial aggressive environments.
Like all epoxy products, this coating tends to chalking and whitening as time goes by.

PRODUCT qualified ENI/ SNAM RETE GAS IN ACCORDANCE WITH GASD C.09.05.10 SPECIFICATION – COMPLIES WITH EN 10289

TECHNICAL DATA	*Colour / Appearance:*		*Green/Other colours on request*	
	Specific gravity A+B:		*1,50 ± 0,05*	
	Solid content:		*100 ± - 2 %.*	
	Theoretical spreading rate:		*0.7 sq.m./Kg at a dry film thickness of 1000 µm.*	
			Base	***Hardener***
	Mixing ratio	*By weight*	*70 parts*	*30 parts*
		By volume	*70 parts*	*30 parts*
	Pot life		*≥ 90 minutes @ +20°C*	
	Typical dry film thickness:		*1500 - 1700 µm dft (Min. 500-800 µm / Max 2000 µm).*	
	Drying at +25°C:		*Touch dry 4 / 6 hours;*	
			through dry: 24-36 hours; full cure 7-10 days.	

GENERAL PROPERTIES

STEELSTOP Epoxy Airless S.F. 1100 is recommended as high thickness external protective coating for works to be laid underground or immersed in fresh water or seawater. Excellent chemical and mechanical resistances also in critical exercise conditions : the coating forms a hard and compact durable film, resistant to several chemical agents, such as solutions of Sulphuric Acid (H2SO4 at 1% in water) ,Caustic soda (NaOH at 1% in water), brackish water (tested up to 35% of NaCl in water), lubricating oil, diesel oil, fuel, sewage waters (industrial water and water drain). Contact our Technical Dept. for further information.

N.B. Do not use in systems operating immerged in concentrated solutions of acids and alkali or solvents.

Principal typical characteristics of the correctly applied coating full-cured (DFT 1500-2000 µm).	***Reference Values***
Impact resistance @+23±2 °C (EN 10289)	≥ 5 J x K x mm (mm of coating thickness)
Impact resistance @ -5±3 °C (EN 10289)	≥ 3 J x K x mm (mm of coating thickness)
Adhesion test Resistance to removal @+23±2 °C (EN 10289)	≤ rating 2
Adhesion test Pull-Off method @+23±2 °C (EN 10289)	≥ 7MPa
Cathodic disbondment 28 days @+23±2 °C (EN 10289)	Average radius ≤ 6 mm Max. radius ≤ 8 mm
Cathodic disbondment 2 days @+60±2 °C (EN 10289)	Average radius ≤ 6 mm Max. radius ≤ 8 mm
Specific electrical insulation test 100 days @+23±2 °C (EN 10289)	RS 100 day/RS 70day ≥ 0,8
Indentation Resistance @+23±2 °C (EN 10289)	≤ 0,2 mm

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Azienda con sistema di gestione qualità UNI EN ISO 9001:2008 certificato da Certiquality - Certificato Nro 2134

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./.	***./.***
Service temperatures (EN 10289)	From - 20 °C to +80 °C
Max. temperature resistance	+90 °C in atmosphere (continuous)
	+100 °C in atmosphere (maximum discontinuous)
Water Absorption (ENI/Snam Rete Gas C. 09.05.10)	≤ 1%
Neutral salt spray test (ISO 9227) – 1000 hrs.	Passed
Taber Abraser (ASTM D 4060) – 1000 cycles with abrasive wheels CS-17 and 1000 g applied load	≤ 60 mg

SURFACE PREPARATION

All kind of substrates: *Degreasing and decontamination. After roughening and a thorough dusting, make sure that substrates to be coated are always perfectly free from humidity.*
Steel: *Sandblasting to SA 2,5 minimum, according to ISO 8501-1 with medium roughness profile Rz DIN 60– 80 µm*

PREPARATION OF THE PRODUCT

Homogenize separately either the Base and the Hardener in their own supply container. Mix the Base and the Hardener in the right proportions stirring enough to obtain an homogeneous green coloured mix.
Then pour each component in the tank of the bi-mixer equipment.

MIXING AND APPLICATION

Application: Suggested application with Hot airless bi-mixer (where the separate pre-heating of each component is allowed). It is also possible to use conventional Airless pump with minimum compression ratio 60 : 1

NB : the required thickness is reached in many coats application, without waiting the previous coat hardens : the operator must go all around the item to be coated continuously spraying until the required WFT thickness, added of about 10%, is reached

Nozzle diameter (Indicative)		*0,018 ÷0.031 inches (mm 0,45 – mm 0,79)*
Nozzle pressure:		*250 – 360 Kg/cm²*
Temperature of the product:		*+30°C/+40°C (Base + Hardener, suggested)*
Suggested temperature during application		*+15°C ÷ +40°C (minimum +5°C)*
Temperature of the substrate:		*+5 / +40°C and however over 3/5°C from the dew point*
Humidity:		*< 85%*
Thinning:	*%*	*Do not Thin.*
Tools cleaning:		*Epothinner*

HANDLING STORAGE AND SAFETY PRECAUTIONS

Handling — *Avoid contact and vapour inhaling. Use individual protection means: gloves, glasses and mask.*

Storage — *Store in a properly dry and ventilated place at a temperature included between min. +5 and max. +40°C in the original containers perfectly sealed. Do not expose to low temperatures during transport.*

Shelf-life: *12 months if the product is properly preserved.*

Safety precautions: Avoid contact and vapour inhaling. Use protective gloves, safety glasses and clothes providing a complete skin protection.

Refer to Material Safety Data Sheet.

Product for professional use only and exclusively for the uses not regulated under CE Directive 2004/42/CE.

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COMPLEMENTARY INFORMATIONS : GENERAL RECOMMENDATIONS FOR THE USE OF STEELSTOP EPOXY AIR S.F. 1100 FOR APPLICATION ON STEEL SUBSTRATES

- *Make sure the substrate is perfectly cleaned, degreased and contaminants free. Perfectly dried and humidity free.*

- *Sandblast the substrate according to ISO 8501/1 minimum SA 2,5 for steel (better SA 3). Suggested roughness profile minimum Rz Din 60 μm and max 100 μm according to ISO 8503 (…parameter to be checked more than once, during the normal work shift).*

- *Thoroughly remove the dust from the substrate using dry compressed air* ***dehumidified.***

- *At the end of the cleaning and preparation operations, check with appropriate instruments that the substrate is completely dried and apply the product immediately.*

- *Do not exceed 4 hours from preparation of the substrate to apply the product (R.H ≤80%). Repeat the previous operations of sandblasting and cleaning if the time is exceeded .*

- *For application of the product, use a hot twin-feed Bi-mixer with automatic mixing at the head (minimum compression ratio 60:1). Before using the product, make sure the automatic cleaning of the spray equipment is fully operating.*
  The cleaning operation must be done any time the application is stopped or suspended as well as in all the situations recommended by the manufacturer of the Bi-mixer equipment.

- *Considered the high viscosity of the two components, as far as the output of the components from the conditioning drum is concerned, we suggest the use of an extrusion pump (if not available use suitable rate and power pump preheating as necessary each component in their original drum as supplied, but not exceeding the temperature of +60/+70°C avoiding also too localized heating)*

- *Check and practically verify before spraying the coating that the correct mixing ratio of Base and Hardener are kept (better to check by weight):*

Mixing Ratio STEELSTOP EPOXY AIRLESS S.F.1100

By weight	***Base 70pp***	***Hardener***	***30pp***
By volume	*Base 70p*	*Hardener*	*1p*

Maximum Tolerance (allowance) allowed in errors :
5% calculated on the correct mixing ratio of base and hardener

- *Check during coating application the mixing ratio is not affected by changes.*

- *Make sure that the temperature of the substrate is always minimum +3/+5°C above the dew point.*

- *The components of the product do not need to be thinned and can be pre-heated at temperatures of +40 / +70°C for the Base and +30 / + 60°C for the Hardener.*

- *The suggested thinner for tools cleaning is our type EPOTHINNER or other specific thinner for Epoxy products*

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- *Steelstop Epoxy Airless S.F. 1100, can be handled at ambient temperature of +25°C after air drying of at least 24/36 hours (and in any case when the minimum surface hardness checked by means of a "Shore D" Durometer reaches at least 65 ±3 points).*
  After the application of Steelstop Airless S.F. 1100 the item must be protected from water action for at least 24 hours and must not be buried or water immersed until it has reached a hardness of Shore D 82 ± 3 (72-96 hours @ +25 °C)

  Lower curing temperature or shorter time , as well as the presence in the air of a higher percentage of Relative Humidity, are all events causing a quicker phenomenon of fading, flatting and whitening of the surface film of the coating (phenomenon which is typical of all epoxy products, but which is not index of a lower corrosion protection of the coating film)

  We draw your attention also on the recommendations of the Technical Data Sheet
  Contact our Technical Department for further information.

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