TUBE COATING

emisspro® TS12

Doc No.: IFS-D-0013
Last updated: 04 January 2023
Rev. 2

DESSCRIPTION

emisspro® TS12 is an innovative coating material used for applying on the outer radiant tube surface inside fired process heaters, furnaces and boilers that results on increasing radiant absorptivity. In general, emisspro® TS12 is used to maximize and stabilize the radiation absorptivity over varying process temperatures, thus promoting rapid and efficient heat transfer, uniform heating, preventing high temperature corrosion, reducing slag deposition on tube surface and prolong service life of tube material.

emisspro® TS12 is used in high temperature industrial applications such as fired process heaters, furnaces and boilers etc. The various substrates are applicable with emisspro® TS12 such as carbon steel, stainless steel and high alloy.

emisspro® TS12 contains materials capable of absorbing thermal radiative energy. emisspro® TS12 is designed to provide high coating film strength, higher abrasion resistance, good thermal shock resistance, thermal expansion characteristics similar to their intended substrates, and adequate bond strength with the substrate.

FEATURES

- High absorptivity and emissivity
- Excellent thermal shock resistance
- Excellent chemical & abrasion resistance
- Good adhesion
- Eco-friendly
- Simply operation

BENEFITS

- Improve furnaces / boilers efficiency and reliability
- Increase productivity / Fuel saving
- Effectively stop oxidation
- Prevent corrosion at high temperature
- Prevent slagging and scaling
- Reduce maintenance cost and time
- Reduce Green House Gas (GHG) and NOx emissions
- Prolong tube life

STORAGE AND HANDLING

- Emisspro® TS12 material shall be stored in the original package until use, in dry and under roof to protect from heat and wetness.
- Recommended material storage temperature is 0 °C – 40 °C. Handle material to avoid long time direct sunlight.
- Use product within 12 months of receiving.
- The product should be placed on a pallet (dimension 1.1 meter x 1.1 meter). Typically, 12 drums would be able to be placed on one pallet. Maximum of 2 stacks of containers (i.e. 24 drums) are allowed for 1 pallet packing (total height of 85 cm).

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MIXING INSTRUCTION

Mixing as per ratio of coating materials. The coating may separate into layers during storage. It is recommended that users to mix contents for 3 to 5 minutes and see the homogeneous of product and ensure that the product is well mixed before application.

SURFACE PREPARATION

The abrasive blasting is the standard method for cleaning and build roughness profile on the tube surface. Minimum surface cleanliness of near white metal SA 2.5 (NACE No. 2/SSPC SP-10) is required.

APPLICATION INSTRUCTION

Applying the emisspro® TS12 onto the tube surface can be used either airless or conventional spray. It is recommended that user to keep nozzle spraying distance at least 15 – 30 cm from the tube surface. Apply multi-coating layers covering all of application area with total Dry Film Thickness (DFT) of 100 – 200 µm.

CLEANING

- To clean up the coating, rinse all equipment with water.
- Ensure that the spray guns and hoses are cleaned after use (recommended within 4 hours) to prevent nozzle and hose blockage**.**

SAFETY

Before using any products, please refers to Safety Data Sheet (SDS). Follow standard confined space entry and work procedures, if appropriate. Wear eye safety protection, chemical resistance gloves. Use NIOSH approved respirator where mist occurs.

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PERFORMANCE & PHYSICAL PROPERTIES

PROPERTIES	TEST MEDTHOD	VALUE
Emissivity	Spectrophotometry	0.80 – 0.95
Recommended Service Temp, °C	-	600 – 1200 °C
Hardness	ASTM D 2240	400 (10 Kgf)
Scratch Resistivity		
Adhesion Pressure	ASTM D 4541	600 PSI
Thermal Shock Resistivity	Alternate heat/cold (Ambient - 1200 °C)	> 15 cycles
Abrasion Resistivity, weight loss	ASTM D 968	< 0.03 %
Color	-	Greenish
Appearance	-	Thick Slurry
No. Components	-	2
Mix Ratio	-	1:1
Major Constituent	-	Alumina - Silica
Carrier Solvent	-	Water
Solid by Weight, %	-	45 – 55
Wet Density, g/cm^3	-	1.55 – 1.65
Viscosity	ASTM D 4402	180 cP
pH	-	10 – 12
Melting Point	-	-
Elongation	**-**	**-**
Volatile Organic Compounds (g/100g)	ASTM D 2369	0

The above data are typical values of which the properties of the samples tested according to the internal procedure and standard of Texplore generally accepted by our customers for many years. The above data cannot be used for specification or guarantee purpose. Texplore reserves the right to update the above data and change our internal procedure and standard without any prior notice.