Product Note

Coating procedure specification (CPS) for ABB electric motors Surface treatments according to NORSOK M-501 standard.

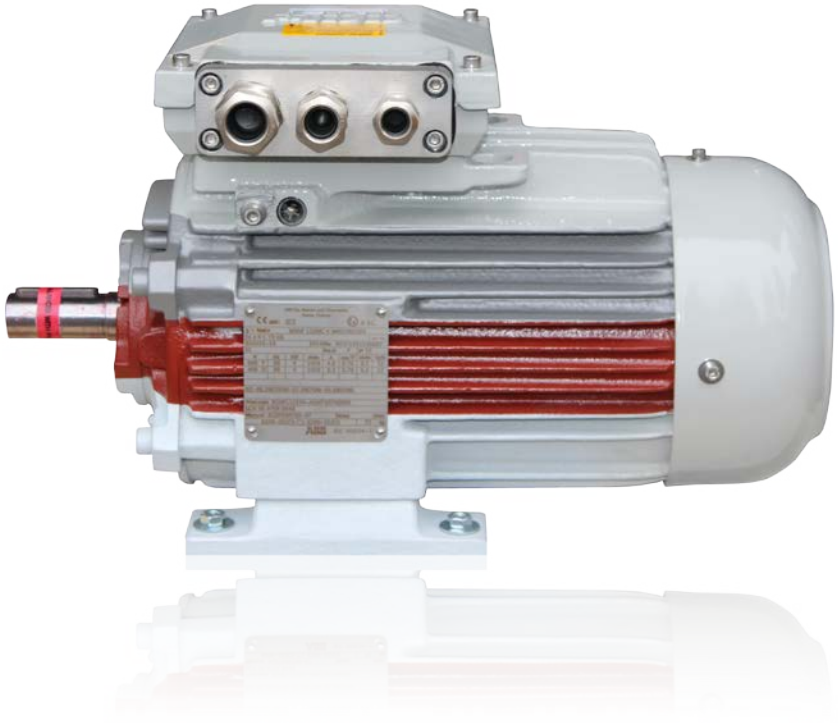

ABB provide coating of Motors to according to NORSOK M-501. The coating procedure specification (CPS) and Inspection and Testing plan (ITP) is according to NORSOK M-501 standard.

For coating, Pure Zinc and Zinc-Aluminium Alloy Thermal Spray Wires from Sulzer Metco is used. These give excellent protection against corrosion in both atmospheric and marine environments. Using either the electric arc spray or combustion wire process, wire coatings of these materials act as sacrificial anodes, galvanically protecting iron or steel substrates. Long experience of field work using these coatings has clearly demonstrated that they are far more effective and longer-lasting than hot dip galvanizing.

Coatings of Metco ZnAl often have better corrosion resistance than either pure zinc or aluminum, by combining the advantages of both materials. This is particularly true in areas where crevices exist and residual moisture and contamination is present, and in areas where the coating has been scratched or scraped, resulting in coating voids and exposed substrate.

Using the electric arc spray process, coatings of these materials are often used in the electronics industry for EMI and RF shielding, or as conductive coatings on capacitors.

Typical uses

- Atmospheric corrosion protection on steel or iron components such as tanks and gas bottles
- EMI and RF shielding on plastic components (electric arc spray only)
- Electrical conductance on components such as the conductive areas on insulators and capacitor end caps (electric arc spray only)

Coating Procedure Specification (CPS)

Assembly, protection and cleaning
Component assembly with handtools and machined surfaces are protected with steel plates, sharp edges are rounded to R min. 2mm and soiled surfaces are cleaned with alkaline detergent.

Surface pretreatment
Assembled motors are Grit blasted (G34 mesh size 0,85-1,18mm) in a separate blasting chamber. When all the paint is gone,blasters takes another hose from where it comes new grit. With this solution we can ensure a sufficiently rough surface through the process.

Zinc coating
Zinc coating is done using an EcoArc 350 machine in separate chamber. Appropriate dust extraction resulting in minimal environmental pollution.

Tie coat
Zincrich epoxyprimer is used for stripecoating on minor areas and tiecoat spread using brush and airless paintsprayer.

Intermediate paint
Brush and airless paintspraying is used. For stripecoating good quality brushes are used.

Protection removal and delivering
Protections are removed and the motor is disassembled. The motor is carefully packed and delivered to ABB for assembly.

Topcoating of assembled motor
The motors are carefully washed and lightly roughened. Shafts etc. are masked during painting process. Brush and airless paintspraying is used.

Surface preparation:		Pretreatment is carried out in accordance to NORSOK M-501 rev.6, chapter 6. All areas to be grit-blasted to Sa3 (ISO 8501-1 1988)								
			Filmthickness				Recoating		Thinner	
Coat no.	Product:	Area to paint:	Vol. Solids:	Dry spec.:	Wet spec.:	Loss:	23°C / Spec. DFT:		No.:	Dilute max.:
		%	%	um	um	%	min.	max.		%
1	Thermally sprayed Zinc	100	100	100	NA	15	NA	4 h	NA	NA
2	Penguard Tiecoat 100	100	42	15	35	30	6 h	*	17	40
3	Jotamastic Plus	100	72	125	175	30	7 h	*	17	5
4	Jotaproof Topcoat	100	63	75	120	30	4 h	*	26	5
*) please see TDS for more detailed information				315						

Inspection and testing plan (ITP)
Testing is essential and a pull off test carried out by XX shows excellent result:

Dolly	Mpa	µm	
1	16,4 Mpa	552	50% koh. Topcoat 50% adh. Topcoat/intermediate coat
2	13,3 Mpa	572	60% koh. Topcoat 40% koh. Intermediate coat
3	8,12 Mpa	472	40% koh. Topcoat 20% intermediate coat 40% koh. Zinc (first layer)
4	7,84 Mpa	552	100% adhesion zinc (first layer)
5	14,5 Mpa	512	90% koh. Topcoat 10% adh intermediate coattiecoat-interm.

For more information please contact:

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