



TEST REPORT

Page 1 of 4

REPORT NUMBER : TURT180129870
APPLICANT NAME : Makelsan Makine Kimya Elektrik San. ve Tic. A.Ş
ADDRESS : İDOSB, Alsancak Sk. No:8/A, I-5 Özel Parsel tuzla İstanbul / TURKEY
TEL:+90 216 4286580 FAX:+90 216 3275164
Attention : Aydın Aydoğdu (aydin.aydogdu@makelsan.com.tr)
BUYER : Hardline
SAMPLE DESCRIPTION : One sample of Blue Metal Panel
DATE IN : 9 July ,2018 (13:59:00)
RESUBMIT DATE : 11 July ,2018
DATE OUT : 11 September ,2018
FIBER COMPOSITION : Not Given
PROVIDED CARE LABEL : Not Given

TEST	SAMPLE
	1
Salt Spray (Fog) 1500 Hours	NR
Salt Spray (Fog) 500 Hours	NR

P = MEETS BUYER' S REQUIREMENT / F = DOES NOT MEET BUYER' S REQUIREMENT / NR = NO REQUIREMENT / SC=STILL CONTINUES / X=NOT PERFORMED / NA = NOT APPLICABLE / LS = LACK OF SAMPLE / NC = NO COMMENT / I = INCONCLUSIVE / # = SEE RESULT / NF = NEEDS FURTHER TESTING / A = ABSENT / M = MARGINAL ACCEPT / SD = SEE DETAILS ENCLOSED / FS: FURTHER STEPS

This report (including any enclosures and attachments) are prepared for the exclusive use of the Customer(s) named in the report and solely for the purpose for which it is provided and on the basis of instructions and information and/or materials supplied by Intertek's Customer. The test results relate only to the specific items tested and are not intended to be a recommendation for any particular course of action. Customer is responsible for acting as it sees fit on the basis of such results. Unless Intertek provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any third party. Intertek do not accept any liability if this report is used for an alternative purpose from which it is intended, nor do Intertek owe any duty of care to any third party in respect of this report. Except where explicitly agreed in writing, all work and services performed is governed by Intertek Standard Terms and Conditions of Service which is available on request or can be obtained at <http://www.intertek.com/terms>. The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with ISO/IEC 17025 and TÜRKAK accreditation requirements. Unless otherwise is specified, all Pass or Fail results are given without uncertainty considered. When uncertainty is taken into account, the result may be borderline. Borderline results need to be re-tested to determine their disposition up to customer's decision. Opinions and interpretations expressed herein are outside the scope of TÜRKAK accreditation. Tests marked (*) in this test report are not included in the TÜRKAK accreditation schedule for this laboratory.

Melihat

N. Sözer

Melihat YILDIRIM
Customer Care Executive

Neslihan SÖZER
Country Business Line Manager
Softlines&Hardlines

Intertek Test Hizmetleri A.S.
Merkez Mahallesi Sanayi Cad. No.23 Altindag Plaza Yenibosna-34197 /ISTANBUL
Phone : +90 212 496 46 46 Fax: +90 212 452 80 55
e-mail : intertekcg.turkiye@intertek.com
<http://www.intertek-turkey.com>



180129870

Test Method	Results	Requirements
Salt Spray (Fog) ISO 9227:2017		
500 Hours		
Protection Rating (Rp)	8	
Appearance Ratings (Ra)	8	No Requirement
Performance Ratings	8/8 sG	

Salt Solution: %5

Properties of reference specimen: CR4-grade steel in accordance with ISO 3574, thickness:1 mm \pm 0,2 mm and dimension: 150 mm \times 70 mm

Mass loss of reference specimen: 74.95 g/m²

Number of tested specimen: 1

Exposure Time:500 hours

Volume of the collected solution: 1.6 ml/h

pH of the test solution: 6.8

pH of the collected solution: 7.0

Temperature of the collected solution:25°C

Salt Concentration of collected solution: 53 g/l

Test Temperature : 35 °C

Bubble tower temperature: 47°C

Method of sample supporting: Placed on rack with 15° angle

Method of cleaning specimen before testing: Sample were rubbed with dry cotton cloth

Method of cleaning specimen after testing :

Specimens dried for 0,5 h to 1 h before rinsing then gently washed in clean running water not warmer than 40°C to remove salt deposits from sample surface, and then immediately dried in a stream of air, at an overpressure not exceeding 200 kpa and at a distance approximately 300 mm.

Purity and type of the salt used: 99.9 sodium chloride

Purity and type of the water used: Deionized water with a conductivity not higher than 20 μ S/cm at 25 °C \pm 2 °C

Classification of types of coating deterioration

A - Staining and/or colour change due to deterioration of the coating (other than that of obvious basis metal corrosion products)

B- Dulling with little or no visible corrosion of coating

C- Corrosion products from anodic coatings

D- Corrosion products from cathodic coatings

E- Surface pitting (corrosion pits probably not extending through to the basis metal)

F- Flaking, peeling, spalling

G- Blistering

H- Cracking

I - Craziing

J- Crow's feet or star-shaped defects

vs= very slight amount

s= slight amount

m = moderate amount

x= excessive amount.

Estimated Total Uncertainty=(\pm 1 Grade)

Test Method	Results	Requirements
Salt Spray (Fog) ISO 9227:2017		
1500 Hours		
Protection Rating (Rp)	2	
Appearance Ratings (Ra)	2	No Requirement
Performance Ratings	2/2 xA	

Salt Solution: %5

Properties of reference specimen: CR4-grade steel in accordance with ISO 3574, thickness:1 mm \pm 0,2 mm and dimension: 150 mm \times 70 mm

Mass loss of reference specimen: 74.95 g/m²

Number of tested specimen: 1

Exposure Time:1500 hours

Volume of the collected solution: 1.6 ml/h

pH of the test solution: 6.8

pH of the collected solution: 7.0

Temperature of the collected solution:25°C

Salt Concentration of collected solution: 53 g/l

Test Temperature : 35 °C

Bubble tower temperature: 47°C

Method of sample supporting: Placed on rack with 15° angle

Method of cleaning specimen before testing: Sample were rubbed with dry cotton cloth

Method of cleaning specimen after testing :

Specimens dried for 0,5 h to 1 h before rinsing then gently washed in clean running water not warmer than 40°C to remove salt deposits from sample surface, and then immediately dried in a stream of air, at an overpressure not exceeding 200 kpa and at a distance approximately 300 mm.

Purity and type of the salt used: 99.9 sodium chloride

Purity and type of the water used: Deionized water with a conductivity not higher than 20 μ S/cm at 25 °C \pm 2 °C

Classification of types of coating deterioration

- A - Staining and/or colour change due to deterioration of the coating (other than that of obvious basis metal corrosion products)
- B- Dulling with little or no visible corrosion of coating
- C- Corrosion products from anodic coatings
- D- Corrosion products from cathodic coatings
- E- Surface pitting (corrosion pits probably not extending through to the basis metal)
- F- Flaking, peeling, spalling
- G- Blistering
- H- Cracking
- I - Craziing
- J- Crow's feet or star-shaped defects

vs= very slight amount

s= slight amount

m = moderate amount

x= excessive amount.

Estimated Total Uncertainty=(\pm 1 Grade)

RESULTS
REPORT :TURT180129870

Page 4 of 4
11 September ,2018
Hardline

Tested Sample (1500 Hours)



Original Sample



END OF TEST REPORT