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TEST REPORT

REPORT NO : 2019CE0693-S1	PAGE : 1 OF 5
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THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant : ZHENGZHOU ZHONGYUAN SILANDE HIGH TECHNOLOGY CO., LTD.
No. 28 Dongqing West St.,
Zhengzhou Hi-Tech Development Zone,
450001 Zhengzhou, Henan, P.R. China

Manufacturer : ZHENGZHOU ZHONGYUAN SILANDE HIGH TECHNOLOGY CO., LTD.
No. 28 Dongqing West St.,
Zhengzhou Hi-Tech Development Zone,
450001 Zhengzhou, Henan, P.R. China

Product : MF 889 Silicone Weatherproofing Sealant

Reference Standard / Method of Test : ASTM C920 – 2014a - Title: Standard Specification for Elastomeric Joint Sealants

Description of sample / Description of Test Specimen : Received one (1) sample of MF 889 Silicone Weatherproofing Sealant for testing which was identified as:
Brand: SILANDE
Type: S
Grade: NS
Class: 35
Use: G, A
Product Description: One part silicone weatherproofing sealant

Date Received of Complete Application : 21 December 2018

Job No. : J20181401708

Description of Test Results / Overall Test Result : This test report covers only test clauses as requested by Applicant to SIRIM QAS International Sdn. Bhd. The test results for the submitted test sample as described in this test report complied with the requirements of the above reference standard at the respective clauses tested.

Issued Date : 10 June 2019

Approved Signatories;

(MUHAMMAD RIZAL BIN ABDUL RAHIM)
Testing Executive



(HAHNAS BINTI MAHBUT)
Head
Chemical & Consumer Section
Testing Services Department

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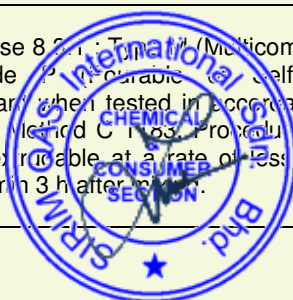
Notes :

The SIRIM Test Report No. 2019CE0693-S1 cancels and replaces the SIRIM Test Report No. 2019CE0693 dated 16th May 2019 due to amendments and corrections on Applicant and Manufacturer address.

Test Results

Product : MF 889 Silicone Weatherproofing Sealant
Brand : SILANDE
Type : S
Grade : NS
Class : 35
Use : G, A
Product Description : One part silicone weatherproofing sealant

No.	Type of Tests	Requirements ASTM C 920 Clause 8 : Physical Requirements	Results	Remarks
1.	Rheological Properties (ASTM C 920 Clause 9.2 & ASTM C 639)	Clause 8.1.1 : Grade P (Pourable or Selflevelling) sealant shall have flow characteristics such that when tested in accordance with Test Method C 639 it shall exhibit a smooth, level surface. (Refer to Type I and III in the test). Clause 8.1.2 : Grade NS (Nonsag) or gunnable sealant shall have flow characteristics such that when tested in accordance with Test Method C 639 it does not sag more than 4.8 mm (3/16 in.) in vertical displacement. Also the sealant show no deformation in horizontal displacement. (Refer to Types II and IV in the test).	Grade NS: Vertical : 0 mm Horizontal: No deformation	Pass Pass
2.	Extrusion Rate (ASTM C 920 Clause 9.3 & ASTM C 1183 Procedure A)	Clause 8.2.1 : Type S (Single Component). Grade P (Pourable or Selflevelling) sealant shall have an extrusion rate of not less than 10 mL/min when tested in accordance with Test Method C 1183, Procedure A. Clause 8.2.2 : Grade NS (Nonsag) or gunnable sealant shall have an extrusion rate of not less than 10 mL/min when tested in accordance with Test Method C 1183, Procedure A.	Grade NS : 35.9 mL/min	Pass
3.	Application Life (ASTM C 920 Clause 9.4 & ASTM C 1183 Procedure A)	Clause 8.2.1 : Type S (Single Component). Grade P (Pourable or Selflevelling) sealant when tested in accordance with Test Method C 1183, Procedure A shall be extrudable at a rate of not less than 10 mL/min 3 h after exposure.	Not Applicable for Type S	-



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Test Results

Product : MF 889 Silicone Weatherproofing Sealant
Brand : SILANDE
Type : S
Grade : NS
Class : 35
Use : G, A
Product Description : One part silicone weatherproofing sealant

No.	Type of Tests	Requirements ASTM C 920 Clause 8 : Physical Requirements	Results	Remarks
4.	Hardness (ASTM C 920 Clause 9.5 & ASTM C 661) <i>Durometer Type A</i>	Clause 8.4.1 : Use T ₁ (Traffic) sealant shall have a hardness reading after being properly cured, of not less than 25 when tested in accordance with Test Method C 661. Clause 8.4.2 : Use T ₂ (Traffic) sealant shall have a hardness reading after being properly cured, of less than 25 when tested in accordance with Test Method C 661. Clause 8.4.3 : Use NT (nontraffic) sealant shall have a hardness reading after being properly cured, of less than 60 when tested in accordance with Test Method C 661.	Not Applicable for Use G, A	-
5.	Effects of Heat Aging (ASTM C 920 Clause 9.6 & ASTM C 1246)	Clause 8.5 : The sealant shall not lose more than 7% of its original weight or show any cracking or chalking when tested in accordance with Test Method C 1246	Weight Loss : 1.4%, No Cracking	Pass
6.	Tack-Free Time (ASTM C 920 Clause 9.7 & ASTM C 679) <i>Time : 72 Hours</i>	Clause 8.6 : There shall be no transfer of sealant to the polyethylene film when tested at 72 h in accordance with Test Method C 679	There was no transfer of sealant to the polyethylene film at 72 hours	Pass
7.	Stain and Colour Change (ASTM C 920 Clause 9.8 & ASTM C 510) i) Exposed 23±2°C, 50±5% RH for 16 to 24 h ii) Xenon Arc Exposure : Irradiance 0.51 W/m ² at 340 nm, Specimens Temperature at 60±2.8°C ; Durations: 100 Hours iii) Exposed 23±2°C, 50±5% RH for 14 days (Immersed in distilled water for 1 mins once a day)	Clause 8.7 : The sealant shall not cause any visible stain on the top surface of a white cement mortar base when tested in accordance with Test Method C 510.	There was no visible stain on the top surface of a white cement mortar base observed	Pass



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Test Results

Product : MF 889 Silicone Weatherproofing Sealant
Brand : SILANDE
Type : S
Grade : NS
Class : 35
Use : G, A
Product Description : One part silicone weatherproofing sealant

No.	Type of Tests	Requirements ASTM C 920 Clause 8 : Physical Requirements	Results	Remarks
8.	Adhesion and Cohesion Under Cyclic Movement (ASTM C 920 Clause 9.9 & ASTM C 719) Substrate : i) Glass ii) Aluminium	Clause 8.8 : The total lost in bond and cohesion areas among the three specimens tested for each surface shall be no more than 9 cm ² (1 ½ in. ²) when tested in accordance with Test Method C 719 with standard mortar, glass and aluminum or any other specified substrates.	No bond loss (Substrate : Glass) No bond loss (Substrate : Aluminium)	Pass Pass
9.	Adhesion in Peel (ASTM C 920 Clause 9.10 & ASTM C 794) Substrate : i) Glass ii) Aluminium	Clause 8.9 : The Peel Strength for each individual test shall not be less than 22.2 N (5 lbf) when tested in accordance with Test Method C 794 with standard mortar, glass and aluminum or any other specified substrate. In addition, the sealant show no more than 25% adhesive bond loss for each individual test.	63.1 N (Substrate : Glass) 70.1 N (Substrate : Aluminium) Cohesive failure and there was no more than 25% adhesive bond loss	Pass Pass Pass
10.	Adhesion in Peel for Use G Exposed to Ultraviolet Exposure Through Glass (ASTM C 920 Clause 9.11 & ASTM C 794) i) Xenon Arc Exposure : Irradiance 0.51 W/m ² at 340 nm, Durations: 200 Hours ii) 7 days immersion in distilled water	Clause 8.10 : The Peel Strength for each individual test shall not be less than 22.2 N (5 lbf) and the compound shall be no more than 25% adhesive bond loss for each individual test when tested in accordance with Test Method C 794 modified to include 200 h in an accelerated weathering device followed by 7 days immersion in distilled water.	84.9 N (Substrate : Glass) Cohesive failure and there was no more than 25% adhesive bond loss	Pass Pass



Test Results

Product	:	MF 889 Silicone Weatherproofing Sealant
Brand	:	SILANDE
Type	:	S
Grade	:	NS
Class	:	35
Use	:	G, A
Product Description	:	One part silicone weatherproofing sealant

No.	Type of Tests	Requirements ASTM C 920 Clause 8 : Physical Requirements	Results	Remarks
11.	Effects of Accelerated Weathering (ASTM C 920 Clause 9.12 & ASTM C 793) i) <i>Xenon Arc Exposure : Irradiance 0.51 W/m² at 340 nm, Durations: 250 Hours</i> ii) <i>Exposure at -26±2° C for 24 hours</i> iii) <i>Bending 180°</i>	Clause 8.11 : The sealant shall show no cracks greater than those shown in Example #2 of Fig. 1 in Test Method C 793 after the specified ultraviolet exposure and shall show no cracks greater than those shown in Example #2 or Fig. 2 in Test Method C 793 after exposure at cold temperature and the bend test when tested in accordance with Test Method C 793	There was no crack observed	Pass
12.	Effects of Continuous Immersion for Use I Sealants (ASTM C 920 Clause 9.13 & ASTM C 1247)	Clause 8.12.1 : Class 1 – After 6 weeks exposure, the total loss in bond and cohesion areas among the specimens tested for each substrate shall be no greater than 9.5 cm ² (1.5 in. ²) when tested according to Test Method C 1247 with standard glass, aluminum or any other substrate specified Clause 8.12.2 : Class 2 – After 10 weeks exposure, the total loss in bond and cohesion areas among the specimens tested for each substrate shall be no greater than 9.5 cm ² (1.5 in. ²) when tested according to Test Method C 1247 with standard glass, aluminum or any other substrate specified	Not Applicable for Use G, A Not Applicable for Use G, A	- -



CONDITIONS RELATING TO THE USE OF SIRIM QAS INTERNATIONAL TEST REPORT

1. A Test Report will be issued in respect of Testing Services conducted and shall relate only to the Sample actually tested. SIRIM QAS International makes no warranty whatsoever and the Applicant shall not represent in any manner that any duplication or mass production of the Product is same as the Sample actually tested or that SIRIM QAS International has tested any of the duplicated or mass produced Product.
2. The Test Report shall not be amended, changed, varied or modified in any manner whatsoever by the Applicant or otherwise.
3. If the Test Report is to be furnished to any third party or to the public, each such Test Report shall be furnished in full, legible and in its entirety.
4. The Test Report shall not be reproduced and shall not in any event be used for any advertising purposes or whatsoever without written approval from the Managing Director of SIRIM QAS International of No 1, Persiaran Dato' Menteri, Building 8, Section 2, P.O. Box 7035, 40700 Shah Alam, Selangor Darul Ehsan.
5. Customer (Applicant/Manufacture/Factory, etc.) is not permitted to use any SIRIM QAS International, SIRIM or other SIRIM's subsidiaries logo or words on packaging, sample's manual, technical specification, brochures/flyers or any other means without the prior written approval from the Managing Director of SIRIM QAS International.
6. If such approval is obtained from the Managing Director of SIRIM QAS International, the Applicant may only include the phrase, "A sample of this product has been tested by SIRIM QAS International ... (Test Report No) ... (dated) (for what test) ... (to which standard)" or such similar words which stress that only the Sample was actually tested. This phrase shall only be used for the purpose of product advertisement or product promotion (eg; brochures). For avoidance of doubt, the statement shall not be used on the sample and packaging of the sample.
7. In the event there is an investigation from a Government Regulatory Agency concerning the Applicant's Test Report, SIRIM QAS International may disclose the information pertaining to the Test Report for purposes of such investigation.
8. Further or in the alternative, it is strictly forbidden unless with prior written approval from the Managing Director of SIRIM QAS International, to represent in any manner whatsoever that SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries has endorsed, approved or validated the Product of the Applicant in any manner whatsoever.
9. In the event the Applicant is found in breach of this provision, SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries without prejudice to any other rights and remedies may take whatever action necessary including but not limited to:
 - a) Informing and placing a notice in the media;
 - b) Obtaining an injunction from Court (cost on a solicitor-client basis to be borne by the Applicant);
 - c) Refusing to accept any further Product for Testing Services from the Applicant or whosoever related to the Applicant, whether subsidiary or otherwise;
 - d) Instructing the Applicant to withdraw and recall the advertisement, statement or document in question and advertise a clarification and apology to SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries twice in a national publication of SIRIM QAS International's choice at the Applicant's sole cost; and
 - e) Informing or lodging a report pertaining the Applicant's Test Report with the relevant authorities.
10. Certified true copies of the Test Report may be issued upon request by the Applicant upon payment of the relevant fee.
11. Corrections to test report shall only be allowed within 6 months from issuance date of the test report and shall be limited to maximum 3 times, after either case whichever occurs earlier, a new test report shall be issued and replace the previous one (having error(s) or lack of information). Issuance of Supplementary Report to the original Test Report shall be for the followings;
 - a) Misprints and typo errors
 - b) Missing technical information
 - c) Test data not reported
 - d) Mistake in reporting of test data