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SPECIFICATION FOR SEALANT PUTTY FOR BONDING METAL SURFACES	
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SPECIFICATION FOR SEALANT PUTTY FOR
BONDING METAL SURFACES

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1.0 SCOPE

The Solvent free sealant putty is to be used for bonding and sealing under humid wet conditions two metal sheets, fixed to wood based impregnated sheets in passenger coaches.

2.0 REQUIREMENTS

2.1 GENERAL:

The sealant putty should be two component high performance compound, bonding the two surfaces of metal sheets fixed to wood based impregnated sheets. Quality plan shall be given where ever required.

2.2 CHARACTERISTICS:

The sealant putty should contain a resin and hardener to be mixed. After curing, tough durable coat or patch/bond should be produced possessing excellent resistance to water wear.

2.3 COLOUR:

The colour obtained by the sealant putty compound should be "Off White".

2.4 VISCOSITY:

The viscosity shall be of Gel type

2.5 MIXING AND MIXING RATIO:

2.5.1 The resin and hardener shall be stirred separately before mixing together.

2.5.2 The resin and hardener should be mixed thoroughly in the recommended mixing ratio 2:1 within the pot life period mentioned in clause 2.6.

2.6 POT LIFE (100gms Mix)

The pot life of the sealant putty compound should be \geq 30 minutes for mixing purpose.

2.7 CURE SCHEDULE

The curing schedule of the sealant putty to the bonding metal surface should be 48 hours at Room Temperature.

2.8 WORKING DRYING TIME

The sealant putty compound working drying time should be \leq 2 hours after pasted to the bonding metal surfaces.

2.8.1 PROCEDURE OF TESTING WORKING DRYING TIME.

Stabilise the sealant putty to be tested at the specified temperature for 3 - 4 hours. Mix the sample thoroughly in the specified ratio and transfer it into the perty dish. Apply a bead (approx. 5 mm) on a white paper. Allow the specimen at room temperature (24 deg. - 28 deg.C.) Start the stop watch at once. After every minute gently touch the surface of the compound with finger and slowly draw away vertically. Make repeated contacts until the sample did not adhere to the finger tip. Consider the time when the sample did not adhere to finger as the dry time or skin forming time. (Disturbed places should not be touched again)

2.9 SHELF LIFE

The material should have the same qualities in all respects during the period of storage which will be 12 months from the date of manufacture.

3.0 STORAGE

The material has to retain its qualities in all respects when stored in cool dry place away from heat source and direct sunlight.

4.0 PACKING

The material shall be securely packed in suitable container. The capacity of the container shall be
i) 650 gms for Resin ii) 350gms for Hardner

5.0 MARKING

The package shall be marked legibly and indelibly with the following information.

1. Name of the material
2. Manufacturers Name and Recognised trade mark if any.
3. Batch Number, Month and Year of manufactures.
4. Weight and volume of the material in package.
5. Date by which the material date of expire.

6.0 SHEAR STRENGTH (Steel - steel)

When tested as prescribed in Annexure-A the dry shear strength should be $\geq 100\text{kg/cm.sq.}$

6.1 WET STRENGTH

The test specimen prepared as prescribed in Annexure-A shall be immersed in water at $27 \pm 2\text{deg.C}$ for 24 hours and then tested for shear strength as prescribed in Annexure A. The shear strength shall not be less than 93 Kg/cm.sq.

6.2 TEST PROCEDURE

The sealant putty is cured in the required dimension at Room temperature for one hour, then it is kept immersed in water for one day. Now the specimen is tested for Lap shear Strength as per Annexure-A

7.0 RESISTANCE TO SPREAD OF FLAME

When tested in accordance with IS:6746-94 Tab-4 Type-I the sealant putty should pass the test for low flammability.

ANNEXURE "A"

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LAP SHEAR STRENGTH

1.0 SCOPE

1.1 This standard covers the determination of tensile shear strength of single and two component and sealant putty in the form of lap joint.

2.0 APPLICABLE DOCUMENTS

2.1 ASTM D 1002 - 1994 ; Apparent shear strength of single lap joint adhesively bonded metal specimens by tension loading (metal to metal)

3.0 SAMPLING

3.1 The sampling is done by taking care so that the sample is representative of the whole batch production. One kg in each batch of production of resin & hardener are to be taken for analysis and copy of the approved QC has to be submitted for reference.

4.0 CONFORMITY

4.1 If the results meets the values specified, report as accepted, if not reject and explain the reason for rejection.

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5.0 APPARATUS

5.1 TENSILE TESTING MACHINE

5.1.1 Calibrated power driven or manually operated machine.

5.2 MILD STEEL STRIPS

5.2.1 Mild steel strips conforming to shape and dimension as shown in the Annexure I.

5.3 Calibrated Vernier caliper

SHEAR STRENGTH

6.0 PROCEDURE

6.1 PREPARATION OF TEST SPECIMEN

6.1.1 Clean the steel strips prepared as per 5.2 by emery paper near the bonding area. Apply sealant putty to both the surface of the strips and overlapped with hand pressure to a width of 12.7 ± 0.25 mm. Allow the bonded specimens to cure at specified temperature and time. For curing conditions refer Quality plan or control plan

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6.2 METHOD OF TEST

- 6.2.1 Place the specimens prepared as per 6.1 in the grips of the tensile testing machine so that each end are in contact with the jaws. Apply load to the specimen at the rate of 50 mm/min. Record the load at failure. Observe the nature of failure (cohesion or adhesion). Measure the length and width of the bonded area. The number of specimens should be atleast five.

ANNEXURE -I

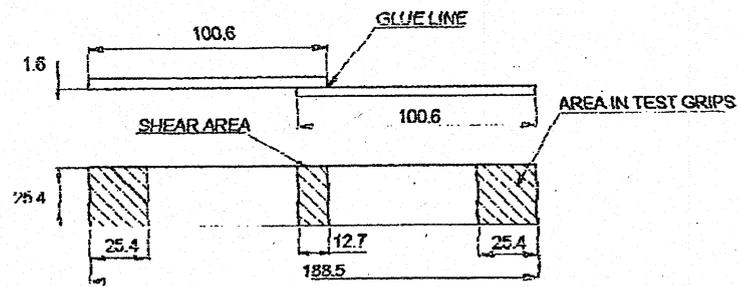
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STRIPS FOR LAP SHEAR SPECIMEN



Drawing Not to Scale.
All dimensions are in mm.