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Report:	Test report
Title:	Corrosion and resistance to rusting
Customer:	Ather India

Document approval		
	Name	**Signature**
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1. Issues (situation, motivation and tasks)

The Ather Company has designed and developed a charging connector for electric vehicles, which is patented. Ather has approached Bosch (BGSW) to validate the charging connector between the vehicle and the charging station according to IS 17017 selective tests as prescribed by Ather requirements.

3 samples of vehicle connector and Vehicle inlet were used for test. The task was to expose the samples to a some of the solutions as specified in standard for a specified duration to check the behavior of connector in corrosive environment. Test and acceptance criteria are as per **IS 17017** chapter no. 30 o check the functionality of the samples.

2. Results, short version

		o.k.	not o.k.
2.1	**Visual inspection of plastic parts for cracks and breakage (New condition)**	☒	☐
2.2	**Visual inspection of samples for rust after test**	☒	☐

The overall result of the examined samples is:

☒ **Positive**
☐ **Negative: No further analysis required**

Recommendation for further work: NA

3. Conclusions and consequences

All 3 connector samples have passed the test. All the test parameters are within the specified limit of assessment criteria.

4. Results, long version

- Plastic parts and terminals inspected before test for abnormalities like cracks, burrs, rust and breakage. All the samples subjected to test were in good/acceptable condition → **OK**

After the test Surfaces has no signs of rust – OK (See chapter 5.4 for Criteria)

5. Details

5.1 Part details:

Sl. No.	Description	Part number	Manufacture date / Received date	Remarks
1	Vehicle Inlet	340A0013634	July-2022	-
2	Vehicle connector	340A0021042	July-2022	-

5.2 Equipment details:

Sl. No.	Test equipment	Equipment no.	Remarks
1	Saltwater setup	ATS-032	Location: External lab (NABL - **TC-7419**)

5.3 Sample preparation, test setup and test details:

1. Visual inspection of plastic parts conducted on all the samples before test.
2. 3 samples of vehicle connector and vehicle inlet equipped with terminals are used for test.
3. All grease is removed from the parts to be tested, by immersion in ethyl acetone, acetone, methylethyl ketone or an equivalent degreasing agent for 10 min.
4. Then the parts are then immersed for 10 min in a 10 percent solution of ammonium chloride in water at a temperature of 20°C ± 5 K.
5. After that without drying, but after shaking off any drops, the parts are placed for 10 min in a box containing air saturated with moisture at a temperature of 20°C ± 5 K.
6. After the parts have been dried for 10 min in a heating cabinet at a temperature of 100°C ± 5 K,
7. Same procedure was followed for all the other samples.
8. See pictures in chapter 6 Enclosure.

5.4 Test conditions and assessment criteria:

30 CORROSION AND RESISTANCE TO RUSTING

Ferrous parts, including enclosures, shall be adequately protected against rusting.

For specific conditions and the provisions for these conditions, special consideration should be given to the product by the manufacturer with regard to resistance to corrosion.

Compliance is checked by the following test.

All grease is removed from the parts to be tested, by immersion in ethyl acetone, acetone, methylethyl ketone or an equivalent degreasing agent for 10 min. The parts are then immersed for 10 min in a 10 percent solution of ammonium chloride in water at a temperature of 20°C ± 5 K.

Without drying, but after shaking off any drops, the parts are placed for 10 min in a box containing air saturated with moisture at a temperature of 20°C ± 5 K.

After the parts have been dried for 10 min in a heating cabinet at a temperature of 100°C ± 5 K, their surfaces shall show no signs of rust.

Traces of rust on sharp edges and any yellowish film removable by rubbing are ignored.

For small helical springs and the like, and for inaccessible parts exposed to abrasion, a layer of grease may provide sufficient protection against rusting. Such parts are subjected to the test only if there is doubt about the effectiveness of the grease film and the test is then made without previous removal of the grease.

Asessemnt Criteria:

After the test Surfaces has no signs of rust

6. Enclosure

6.1 CORROSION AND RESISTANCE TO RUSTING

Pic 1: Test set up	Pic 2: Test set up