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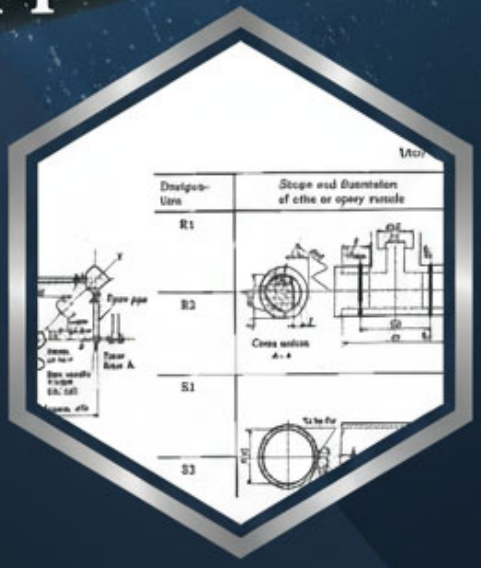

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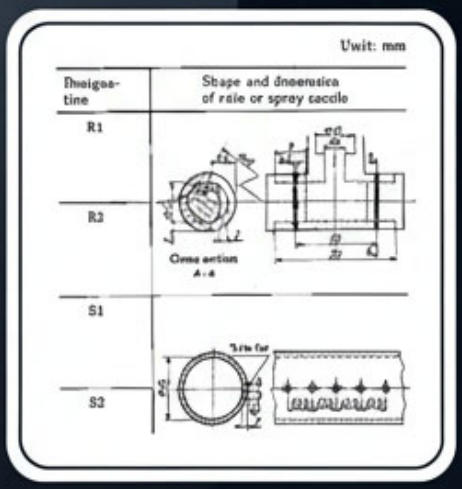

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JIS

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Method of moisture, rain and spray test for automobile parts

JIS D 0203–1994

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JAPANESE INDUSTRIAL STANDARD J I S

Method of moisture, rain and spray test for automobile parts

D 0203-1994

1. Scope This Japanese Industrial Standard specifies the methods of moisture resistance test and waterproof tests for automobile parts (hereafter referred to as "parts"), with the exception of the following tests:

(1) Tests aimed at weather resistance and/or corrosion resistance.

(2) Tests aimed at examining water pressure, airtightness or leak irrespective of circumference moisture, rain, spray condition of the parts.

2. Type and symbol of tests The type and symbol of the tests shall be in accordance with Table 1.

Table 1

Type of test	Symbol of test	Purpose of test
Moisture test	M1	The test to investigate the function of the parts subjected to moisture.
	M2	The test to investigate the function of the parts subjected to high temperature and humidity.
Rain test	R1	The test to investigate the function of the parts subjected to droplets.
	R2	The test to investigate the function of the parts subjected to indirect wind and rain or spray.
Spray test	S1	The test to investigate the function of the parts subjected to direct wind and rain or spray.
	S2	The test to investigate the function of the parts subjected to heavy water spray.
Dip test	D1	The test to investigate the function of the parts subjected to occasional water immersion.
	D2	The test to investigate the function of the parts continually subjected to water immersion or of the parts designed to be completely waterproof.
	D3	The test to investigate the function of the waterproof parts of special application.

3. Testing method Using prescribed test equipment, install the sample on it in normal operating condition and conduct tests on conditions specified in Table 2 to examine humidity resistance, waterproof, drainage or change in overall function.

Table 2

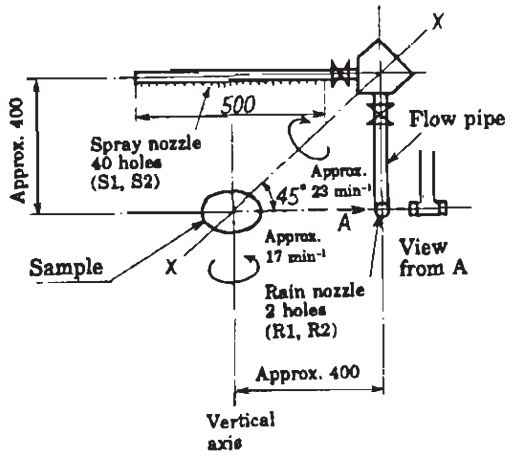
Symbol of test	Water pressure at rain or spray nozzle (gauge pressure) MPa	Dimension of rain or spray nozzle mm	Number of rain or spray nozzles	Water flow rate l/min (min.)	Water temperature °C	Moisture condition	Temperature difference(1) between the sample and water °C	Test time	Test procedures
M1	—	—	—	—	Approx. 32	Atmosphere of air, droplet and water vapor mixture	—	8 h	Rotate a sample around the horizontal axis at rate of 1.5 min^{-1}.
M2	—	—	—	—	Approx. 60		—	1 h	—
R1	0.01	See Fig. 1	2	1.9	Ordinary temperature	—	—	10 min	See Remarks 1.
R2	0.03	See Fig. 1	2	3.2	Ordinary temperature	—	—	10 min	See Remarks 1.
S1	0.10	ϕ1.2	40	24.5	Ordinary temperature	—	—	30 min	See Remarks 1.
S2	0.30	ϕ1.2	40	39.2	Ordinary temperature	—	—	1 h	See Remarks 1.
D1	—	—	—	—	See Remarks 2.	—	—	5 min	Submerge a sample into water as far as its upper surface.
D2	—	—	—	—	—	—	Approx. 30	10 min	Submerge a sample into water to a depth of 100 mm from its upper surface.
D3	—	—	—	—	—	—	Approx. 50	10 min	Submerge a sample into water to a depth of 100 mm from its upper surface.

Note (1) Temperature difference means that water temperature is higher than that of the sample.

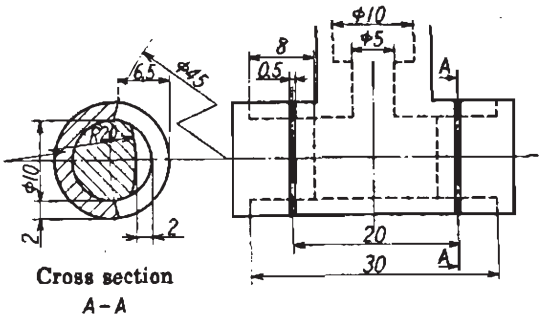
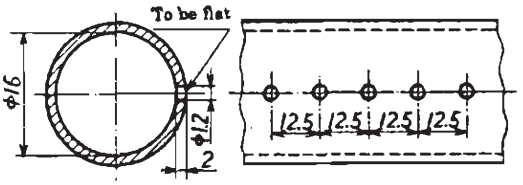
Remarks 1. With regard to the rain test and spray test, the samples shall be mounted at a distance of approximately 400 mm from the flow pipe having rain nozzle or spray nozzle as shown in the following Fig. 1. And then, the flow pipe shall be rotated around the axis *X*-*X* at the rate of approximately 23 min^{-1}.

Besides, the samples shall be rotated around the vertical axis at the rate of approximately 17 min^{-1}. However, this procedure of rotating the samples may be omitted by agreement between the purchaser and supplier.

Fig. 1



Unit: mm

Designation	Shape and dimension of rain or spray nozzle
R1	
R2	
S1	
S2	

Remarks 2. In the case of dip test D1, the water temperature shall be lower than at least 10°C, as compared with the temperature of the sample.

3. In the case of moisture test, a sealed case shall be used.

4. In case where it is necessary, test may be repeated a number of times as agreed upon by the purchaser and supplier, based on the cycle of the test time specified in Table 2.

5. In the case of ones having air vents or drain holes in its structure, tests may be carried out with holes closed, if necessary.

D 0203-1994
Edition 2

Japanese Text

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