

KES

Testing Method of Air Brake Hoses for Automobiles

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Contents

1. Scope of Application
2. Quality
3. Structure
4. Dimension
5. Measurement and Test Method
6. Quoted Standard

Comment

1. Scope of application

This standard shall specify the air brake hose (Called as hose below) used for air brake system of a vehicle and attachments of the system.

Also, the hose shall include air hose used for air servo hydraulic brake system and air over-high torque brake.

Remark The unit and dimension with symbol of { } at this standard is described by national unit system (SI) for reference.

2. Quality

2.1 Appearance

The hose should be flexible and have constant inner diameter and thickness, no harmful flaw, no bubble and no other defects.

2.2 Performance

Carry out test for the hose by 5.3 ~ 5.16 satisfying regulation of table 1.

Table 1

Test item		Performance		Primary test condition	Application item
Inner diameter contraction test		Plug gage should drop within 5 seconds		Outer diameter of Plug gauge of 60~100g is inner diameter of steel ball × 0.95	5.3
		Steel ball should get through 25mm/sec		Steel ball (Same as outer diameter of plug gauge) Air pressure 2 kg / cm ² {0.196 Mpa}	
Leakage test		A bubble or local expansion should not occur.		Air(nitrogen) pressure 14 kg · cm ² {1.37Mpa} for 3 min	5.4
Water pressure test	Elongation %	+5 -7		Water pressure 1 kg / cm ² ~14 kg / cm ² {0.098~1.37 Mpa}	5.5
Yielding test	Yielding strength Kg / cm ² {MPa}	More than 70{6.86}		Water pressure increasing speed 70 kg / cm ² · min {6.86 Mpa / min}	5.6
Tension test	Tensile strength Kg g {N}	Less than inner diameter 6.0mm	More than 113.5{1113.1}	Tension speed 25~30 mm / min	5.7
		More than inner diameter 6.0mm	More than 147.5{1446.5}		
Air heating aging test		Crack, fire extinguishing, and breakage should not occur.		At 100±1°C 70 ^{+ 2} ₀ hrs After air heating aging, drop a weight of 0.45kg.	5.8
Low temperature test		Crack, breakage and leakage should not occur.		At -40±2°C 70 ^{+ 2} ₀ hrs After bending test for 3~5 sec, carry out leakage test.	5.9
Ozone aging test		Crack and other problem should not occur.		Ozone density 50±5 pphm, at 40±2°C 70 ^{+ 2} ₀ hrs	5.10
Corrosion resistance test		Base metal should have no rust.		Salt solution density 5±1% (Mass) Cary out test to spray salt solution for 24hrs.	5.11
Leakage test		It should satisfy tensile strength regulation.		After water at room temperature for 166 ^{+ 2} ₀ hrs Carry out tension test.	5.12
Fluid resistance test		It should not be dissolved.		Precipitate in 50% chloride zinc solution for 192 ^{+ 2} ₀ .	5.13
Durability test		Crack, fire extinguishing and breakage should not occur.		Sunshine should be maintained to carry out palpation durability test for 600hrs and ultraviolet ray for 1200hrs.	5.14
Oil resistance test	Volumetric change rate %	Less than 100		Test oil NO3 at 100±1°C for 70 ^{+ 2} ₀ hrs.	5.15
Exfoliation test	Exfoliation strength	More than 3.5{34.3}		Tension speed 25.0±1.5mm/min	5.16