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Fittings for pliable plastics conduits

ICS 29.120.10

Descriptors : electric conduits, electric wires, electric wiring systems, plastics, flexible tubing, electric connectors, fitting

Reference number : JIS C 8412 : 1999 (E)

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS C 8412 : 1992** is replaced with **JIS C 8412 : 1999**.

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Fittings for pliable plastics conduits

1 Scope This Japanese Industrial Standard specifies couplings, connectors and combination couplings (hereafter referred to as “fittings”) to be used for the pliable plastics conduits (hereafter referred to as “PF conduits”, “CD conduits” and “pliable conduits” generically).

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards indicated below shall be applied.

JIS C 0072 *Fire hazard testing—Part 2 : Test methods—Section 1 / sheet 0 : Glow-wire test methods—General*

Remarks : **IEC 60695-2-1** *Fire hazard testing—Part 2 : Test methods—Section 1 / sheet 0 : Glow-wire test and guidance* is identical with the said standard.

JIS C 0920 *Tests to prove protection against ingress of water and degrees of protection against ingress of solid objects for electrical equipment*

JIS C 8305 *Rigid steel conduits*

JIS C 8430 *Unplasticized polyvinyl chloride (PVC-U) conduits*

3 Definitions For the purpose of this Standard the following principal definitions apply:

- a) **coupling** A connecting fitting which connects pliable conduits of the same type to each other.
- b) **connector** A connecting fitting which connects a pliable conduit to a box or the like.
- c) **combination coupling** A connecting fitting which connects a pliable conduit to a conduit of other type.
- d) **non-flame propagating fitting** A fitting which is liable to catch fire as a result of applied flame, in which the flame does not propagate, and which extinguishes itself within a limited time after the flame is removed.

4 Classification

4.1 Classification of fittings The classification of fittings shall be as stated in Table 1.

Table 1 Classification of fittings

Classification	Applicable conduits	Informative figure
Coupling	PF conduit, CD conduit	1
Connector	PF conduit, CD conduit	2
Combination coupling	PF conduit, CD conduit, VE conduit ⁽¹⁾ , rigid steel conduit ⁽²⁾	3

Notes (1) The VE conduit means the unplasticized polyvinyl chloride conduit specified in **JIS C 8430**.

(2) The rigid steel conduit means the rigid steel conduit specified in **JIS C 8305**.

4.2 Classification according to temperature The classification according to temperature shall be as stated in Table 2.

Table 2 Classification according to temperature

Unit : °C

Temperature classification	Lowest temperature in storage and transport	Lowest temperature in installation and service	Service temperature range
Type-5	-5	-5	-5 to +60
Type-25	-25	-15	-15 to +60

4.3 Classification according to resistance to burning The classification according to resistance to burning shall be as follows:

- a) non-flame propagating fitting (self-extinguishable one): fittings for PF conduit
- b) flame propagating fittings (non-self-extinguishable one): fittings for CD conduit

5 Performances The performances of fittings shall comply with Table 3, when the tests are carried out in accordance with 8. However the test for resistance to burning (self-extinguishable property) is not applicable to fittings for CD conduits.

Table 3 Performances

Item	Performance	Applicable subclause for test
Resistance to shock	Nine or more samples out of 12 samples shall not show evidence of decomposition, cracks or fissures found out by visual check, nor deformation detrimental to normal service.	8.1
Tensile strength	The fitting shall stay as previously assembled with the conduits and show no cracks or fissures found out by visual check.	8.2
Burning resistance (self-extinguishable property)	The flame shall go off within 30 s after removal of the glow wire.	8.3
Dielectric strength	The tripping device shall not operate during the test for 15 min.	8.4
Insulation resistance	The insulation resistance shall be 5 MΩ or more.	8.5
External influences	The fitting shall have a resistance of IP30 or better.	8.6

6 Construction The construction of fittings shall comply with the following requirements:

- a) The fitting shall be free from sharp edges and/or burrs which may damage the insulated conductors or cables or injure the installer or user on its inside surface, and from any projection on its surface.
- b) If threaded components are used for attaching the parts constituting the fitting or the cover, or for connecting and fixing the conduits, the threaded components shall not cause damage of the insulation of cable when they are correctly attached.
- c) The fixing means by thread shall be so designed that they can withstand the mechanical stress which will occur during the installation and/or normal service.
- d) For threaded components which mate with the internal threads provided on non-metallic material and the threaded components of non-metallic material, operations each consisting of tightening and loosening the mating shall be carried out 10 times. In other cases, the operations shall be carried out 5 times.
- e) The test shall be carried out by applying the torque specified in Table 4 using a corresponding screwdriver or spanner. The threaded components shall not be tightened quickly or violently.
- f) After the test, there shall be no trouble to reuse the thread, nor damage on the head and thread.
- g) The materials used for the joints, e.g. rubber and fiber, which may be exposed to the external influence when they are assembled in accordance with the instruction manual of the manufacturer shall have at least the resistance to the external influence of the same level as that of the conduits or the fittings.