

JIS

JAPANESE INDUSTRIAL STANDARD

**Method of fire test for
noncombustible structural
parts of buildings**

JIS A 1302—1994

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J I S

Method of fire test for
noncombustible structural parts of buildings

A 1302-1994

1. **Scope** This Japanese Industrial Standard specifies method of fire test for noncombustible structural parts (structural parts having frame work made of steel frame and other noncombustible materials) of buildings such as wall, column, beam, floor (inclusive of ceiling), etc.

Remarks 1. The shock test specified in 7. or watering test specified in 8. shall be carried out where necessary.

Further, concerning main frame work, loaded heat test specified in 6. shall be carried out.

2. The constructions that passed the test shall be classified as follows:

Classified by grade of heat test: Grade 1, Grade 2 and Grade 3

In case of existence of other tests	{	Shock test	S
		Watering test	W
		Loaded heat test	L

Example of symbol: Grade 2 SW — Part that passed the Grade 2 heat test and also passed the shock test and watering test

3. The following standard is cited in this Standard:

JIS C 1602 Thermocouples

4. The units and numerical values in { } in this Standard are based on the traditional units and appended for informative reference.

2. **Test piece**

2.1 Test piece shall be of the same construction as that used practically, and if there is partial difference in fire-proof, the part regarded as weak in fire-proof shall be included.

2.2 Reference size of test surface of test piece shall conform to Table 1.

Table 1

Kinds of test piece	Size
Wall, floor	180 cm × 180 cm min.
Column	Length 180 cm min. (section shall be actual one.)
Beam	Length 180 cm min. (section shall be actual one.)

2.3 The test piece shall be dried up to the air dried state.



3. Heating furnace

3.1 Heating furnace shall be able to make temperature change corresponds with time shown in 4. uniformly almost on whole testing surface.

3.2 Heat source of heating furnace shall be the flame which will be able to reach direct sufficiently to the testing surface such as coal gas flame, fuel oil flame and other suitable flame.

3.3 Fixing frame of test piece shall be heat-proof and constructed so as to be able to hold testing surface at the appointed position.

3.4 Wall shall be heated from single side at the vertical position, column shall be from four sides at the vertical position, beam and floor shall be from under side at the horizontal position.

3.5 The heating furnace shall be provided with the device which is able to apply a specified load on the test piece during heating, as occasion demands.

4. Grade of heating Heating temperature shall conform to reference curves shown in Table 2 and Attached Fig. 1, and shall be classified into Grade 1, Grade 2 and Grade 3 according to the heating temperature.

Table 2. Heat test temperature

Unit: °C

Elapsed time (min)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Classified by heating															
Grade 1 heating	100	150	260	410	660	910	1060	1120	1120	1090	1010	920	850	780	720
Grade 2 heating	75	120	190	310	500	680	790	840	840	820	760	690	640	585	540
Grade 3 heating	25	55	100	180	300	410	500	550	550	525	490	450	400	365	330

Elapsed time (min)	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Classified by heating														
Grade 1 heating	660	610	560	530	480	450	410	380	350	320	290	260	230	200
Grade 2 heating	495	460	420	395	360	340	310	285	260	240	220	195	175	150
Grade 3 heating	305	280	260	240	225	210	190	175	160	150	140	125	110	100

Remarks: Temperature shall be raised gradually from the ordinary temperature for the first 2 min.