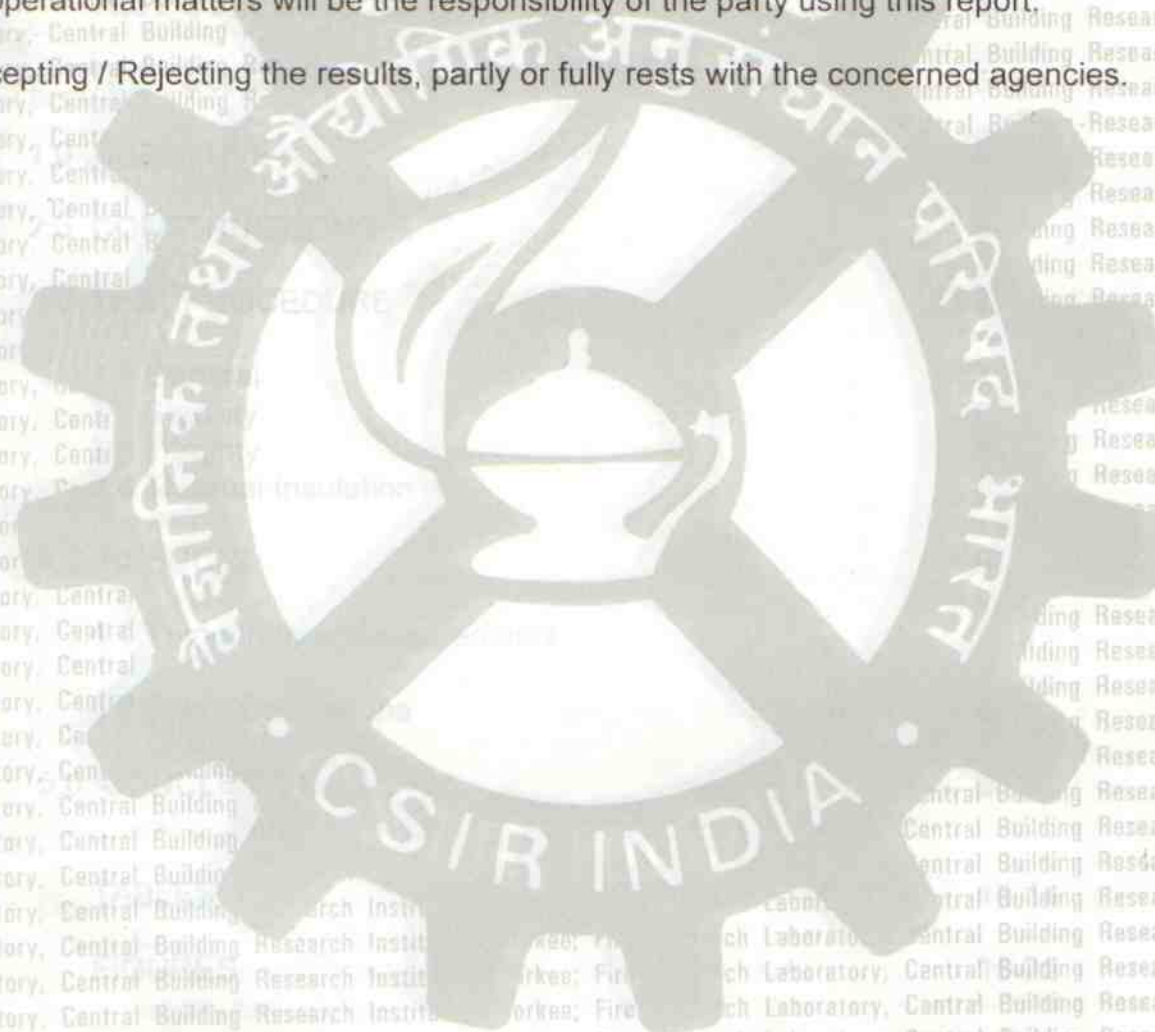


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TEST SCHEDULE 1/3 (Reference No. – FR / 8946)

1. Name of the Laboratory : Fire Research Laboratory
Central Building Research Institute,
Roorkee-247 667
2. Name of the Party : M/s GMPartitions Pvt. Ltd.
Bldg. No. 14, CTS No. 82,82 (1 to 17)
L.B.S Marg, Vikhroli (W),
Mumbai-400 083
3. Name of the Test : Fire Resistance Test
4. Date of Test : February 08, 2008
5. Ambient Temperature : 15 °C
6. Test Procedure : As per BS:476, Part 20 & 22 and
IS:3614 (Part 2)
7. Applicability of Test Criteria : Stability : Yes
Integrity : Yes
Thermal Insulation : Yes
8. Specimen Details : Single Leaf Single Swing G.I. Composite
Fire Door.
- | Size | Door Frame | Door Panel |
|-----------|------------|------------|
| Height | : 2120 mm | : 2057 mm |
| Width | : 0999 mm | : 0924 mm |
| Thickness | : 100 mm | : 44 mm |
9. Door Construction : As shown in Figure – 1 and Figure 2.
(Drg. No. 1/3-8946(1) & 1/3-8946(2))
10. Door Type : Insulated Type door
11. Door Installation : Opens outwards the furnace
12. Intended Test Duration : 120 minutes (Sixty minutes only)
13. Test Results : Please refer clause 4.0 and 5.0 of the report


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TEST SCHEDULE 2/3 (Reference No. – FR / 8946)

1. Name of the Laboratory : Fire Research Laboratory
Central Building Research Institute,
Roorkee-247 667
2. Name of the Party : M/s GMPartitions Pvt. Ltd.
Bldg. No. 14, CTS No. 82,82 (1 to 17)
L.B.S Marg, Vikhroli (W),
Mumbai-400 083
3. Name of the Test : Fire Resistance Test
4. Date of Test : April 02, 2008
5. Ambient Temperature : 25 °C
6. Test Procedure : As per BS:476,Part 20 & 22
7. Applicability of Test Criteria : Stability : Yes
: Integrity : Yes
: Thermal Insulation : Yes
8. Specimen Details : Partition
Size
Height : 3000 mm
Width : 3000 mm
Thickness : 0080 mm
9. Specimen Construction : As shown in Figure – 3
(Drg. No. 2/3 – 8946(1))
10. Specimen Type : Insulated
11. Intended Test Duration : 60 minutes (Sixty minutes only)
12. Test Results : Please refer clause 4.0 and 5.0 of the report


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TEST SCHEDULE 3/3 (Reference No. – FR /8946)

1. Name of the Laboratory : Fire Research Laboratory
Central Building Research Institute,
Roorkee-247 667
2. Name of the Party : M/s GM Partitions Pvt. Ltd.
Bldg. No. 14, CTS No. 82,82 (1 to 17)
L.B.S Marg, Vikhroli (W),
Mumbai-400 083
3. Name of the Test : Fire Resistance Test
4. Date of Test : July 25, 2008
5. Ambient Temperature : 30°C
6. Test Procedure : As per BS:476, Part 20 & 22
7. Applicability of Test Criteria : Stability : Yes
: Integrity : Yes
: Insulation : No
8. Specimen Details : Single Leaf Single Swing G.I Composite Fire Door
(Uninsulated)
- | Door Frame | Door Panel |
|--------------------|------------|
| Height : 2062 mm | : 1115 mm |
| Width : 1000 mm | : 945 mm |
| Thickness : 100 mm | : 44 mm |
9. Specimen Construction : As shown in Figure 4 and Figure 5
(Drg. No. 3/3 –8946 (1) and 3/3- 8946 (2))
10. Door Type : Uninsulated
11. Door Installation : Opens outwards the furnace chamber
12. Intended Test Duration : Two Hours
13. Test Results : Please refer clause 4.0 and 5.0 of the report


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1.0 OBJECTIVES

The fire resistance test of the fire doors and partition specimen, as detailed in the test schedule 1/3, test schedule 2/3 and test schedule 3/3, have been carried out as per the test procedure specified in BS : 476 (Part 20 & 22)-1987 and IS : 3614 (Part 2) : 1992.

2.0 CONSTRUCTIONS

2.1 SINGLE LEAF SINGLE SWING G.I COMPOSITE FIRE DOOR

Please Refer Figure 1 and 2.

2.1.1 Construction Details:

The panel of single leaf single swing G.I. composite fire door (evaluated on February 08, 2008) was having overall dimensions as 2058 mm (H) x 924 mm (W) x 44 mm (T). The door panel comprises of the proprietary insulation material sandwiched between the G.I. steel sheet. The door panel was fixed in the composite G.I. steel door frame with three numbers S.S. ball bearing hinges. The overall dimensions of door frame was 2120 mm (H) x 999 mm (W) x 100 mm (T).

The construction details and dimensions are shown in Figure 1 and Figure 2.

2.2 PARTITION

Please Refer Figure 3

2.2.1 Construction Details:

The partition specimen of overall dimensions as 3000 mm (H) x 3000 mm (W) x 80 mm (T) was made of periphery work of 30 mm x 83 mm x 1.5mm thick outer 'C' channel all round and fixed to the specimen frame holder of the wall furnace. 'U' stiffener were fixed horizontally in the outer 'C' channel. Rock wool slabs were filled in the space between the 1 mm thick G.I. front skin and 1 mm thick G.I. back skin as shown in the Figure 3.



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2.3 SINGLE LEAF SINGLE SWING G.I COMPOSITE UNINSULATED FIRE DOOR

Please Refer Figure 4 and 5.

2.3.1 Construction Details:

The panel of single leaf single swing G.I. composite fire door (evaluated on July 25, 2008) was having overall dimensions as 2062 mm (H) x 945 mm (W) x 44 mm (T). The door panel comprises of the proprietary infill material sandwiched between the 1.0 mm thick G.I. steel sheet. The door panel was fixed in the composite 1.5 mm thick G.I. steel door frame with three numbers S.S. ball bearing hinges. The overall dimensions of door frame was 2115 mm (H) x 1000 mm (W) x 100 mm (T).

The construction details and dimensions are shown in Figure 4 and Figure 5.

3.0 TEST PROCEDURE

3.1 General

The fire resistance test of single leaf single swing G.I. composite fire doors (Insulated and Uninsulated) and partition was carried out as per detailed in the test schedule 1/3, test schedule 2/3 and test schedule 3/3.

The fire doors were installed separately in the 225 mm thick brick wall of the furnace in such a manner that the doors opened outwards the furnace chamber as shown in Figure 1 and Figure 4.

The partition was installed in the 225 mm thick brick wall of the furnace as shown in Figure 3.

The temperature of the furnace was maintained in accordance with the following relationship:

$$T - T_o = 345 \log (8t+1)$$



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Where ,
 t = time in minutes,
 T = furnace temperature in $^{\circ}\text{C}$
 T_0 = initial temperature in $^{\circ}\text{C}$

as specified in IS: 3614 (Part 2) – 1992 and BS: 476 (Part 20 & 22) – 1987.

3.2 Stability

The time should be noted at which the door collapses or through opening are formed or when failure of the locking or latching mechanism takes place.

3.3 Integrity / Impermeability

Observations should be made of cracks, holes or other openings in the specimen through which flames or hot gases could pass to ignite a cotton pad. Failure of integrity shall be deemed to have occurred when flames and / or hot gases cause flaming or glowing of the cotton fiber pad.

For situation where the use of the cotton pad is not suitable, failure shall be deemed to occur when either:

- the 6 mm diameter gap gauge can penetrate through a gap such that the end of the gauge can projects into the furnace and the gauge can be moved in the gap for a distance of at least 150 mm ; or
- the 25 mm diameter gap gauge can penetrate through a gap such that the end of the gauge can projects into the furnace.

3.4 Thermal Insulation

The temperature of the unexposed face should be measured by means of not less than five thermocouples, one placed approximately at the centre of the face and others approximately at the centers of each quadrant.

In addition temperature should be measured at the point that appears to be the hottest at any time during the test. This temperature should not be used in the calculations for average temperature.

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