

Horizontal Type Fire Test Furnace

Test Examples



Floor collapse test in fire



Cable tray test in fire



Damper test in fire



Beam test in fire

Sample Test Standards

ASTM E 119	<ul style="list-style-type: none"> Standard test methods for fire tests of building construction and materials
ISO 834-1	<ul style="list-style-type: none"> Fire-resistance tests - Elements of building construction - Part 1: General requirements
ISO 834-5	<ul style="list-style-type: none"> Fire-resistance tests - Elements of building construction - Part 5: Specific requirements for loadbearing horizontal separating elements
ISO 834-6	<ul style="list-style-type: none"> Fire-resistance tests - Elements of building construction - Part 6: Specific requirements for beams
ISO 834-9	<ul style="list-style-type: none"> Fire-resistance tests - Elements of building construction - Part 9: Specific requirements for non-loadbearing ceiling elements
UL 1709	<ul style="list-style-type: none"> Rapid rise fire tests of protection materials for structural steel

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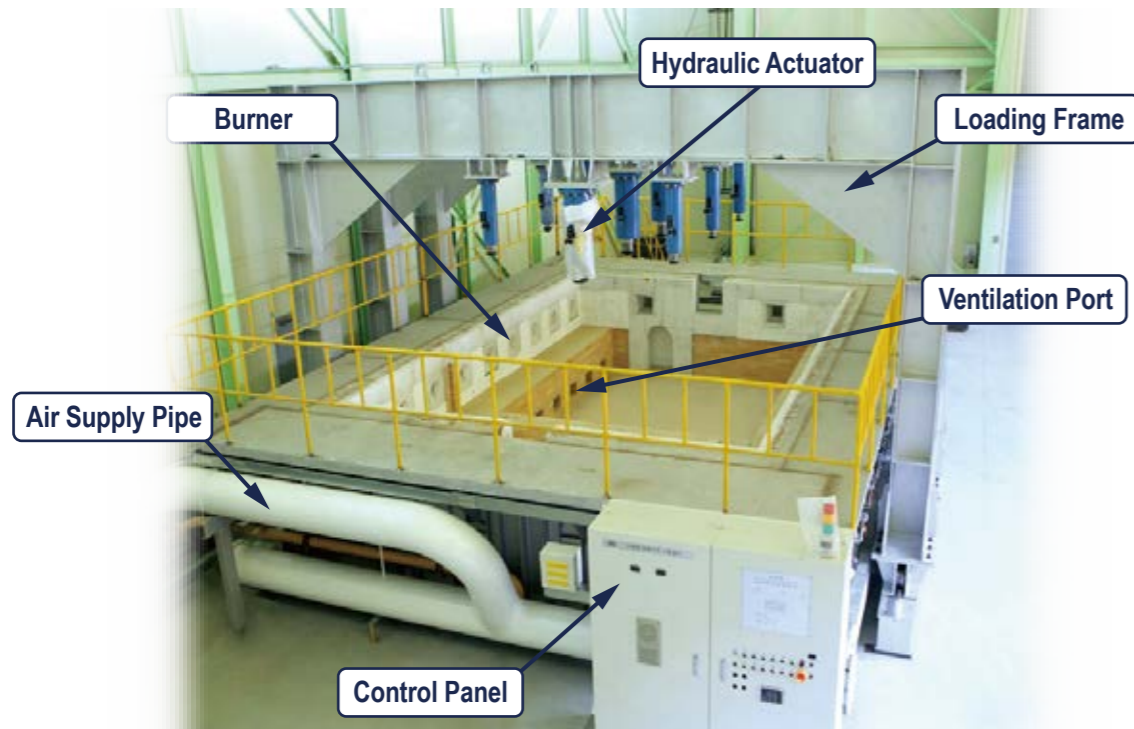
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Objectives

- Fire performance and reliability testing of horizontal type structural systems or components (e.g., floors, ceilings, supporting beams or their assemblies) in fires with or without mechanical loads in the lateral direction
- Fire performance and reliability testing of passive fire protection system for horizontally positioned systems

Features of Test Facility

- Rectangular type horizontal furnace is used to apply the elevated temperature due to fires.
- Temperature control is made in accordance with the designated temperature versus time history as per international standards or other fire scenarios.
- Hydraulic actuator is installed to apply the mechanical loads up to 3MN and/or 450 mm stroke associated with concentrated or distributed loads in the lateral direction.
- Watch holes are allocated to close-eye monitor during testing.
- Remote control and automatic test data measurements are made.



Specification

- Maximum specimen size: W4.5 x L6.5 (m)
- Maximum temperature: 1,430 deg. C
- Gas burner: Max. 463kW
- Exhaust gas treatment system: 1,200m³/min
- Maximum loading capacity: 3MN and 450mm stroke
- Data acquisition sampling rate: 10 S/s

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Overview



Key Components



Gas burner



Combustion system



Exhaust gas treatment system



Hydraulic power unit



Hydraulic actuator



Gas storage



Manometer



Load cell