**To: Rawand Gahitly factory**

**Subject: fire resistance test report**

Laboratory Test Report:

- **Type of sample**: Lightweight Pumice masonry unit
- **Manufacture name**: Rawand Gahitly Factory
- **Test specimen**
  - Trade name: Pumice block
  - Identification mark: none
  - Delivery to the lab: by client
  - Number of test specimen; 10 unit
  - Dimensions: 190 mm * 390 mm *190 mm
- **Classification**: Stability, resistance
- **Purpose of the test**: Client request for examination of fire resistance of non-loadbearing pumice masonry unit expose to fire.
- **Dates**: production / - new production
  Sample receive /22-12-2022
  Laboratory test /
- **Laboratory sample code**: **2/23/P0023**
- **Name of the tester**: Fatih Ahmad (Physicist)
- **Test procedure**: European Standard ( EN 1364-1) / 2015

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## Test Procedure

Fire resistance test are the destructive test procedure, fire protection is the prevention and reduction of the hazards associated with fires. A fire-resistance rating typically means the duration for which a passive fire protection system can withstand a standard fire resistance test.

For the purpose of the test pool fire tests made from closed furnace in dimensions (200mm*400mm*600mm) with open side to the test specimen, the furnace consists of a concert shielding with stone wool resistance to fire up to (1500 $c^0$ ) exposer to the fire, the specimen non load bearing pumice masonry unit fit the open side of the furnace and mounting with the stone wool, the fire ignite inside the furnace from duration of (100 min) the inside pressure balanced with the air circulation from the back of fire nozzle to the atmospheric pressure . circular plate thermocouple diameter (50 mm) applied to the test specimen with to the side of fire exposer and another one applied to the outer side of the test specimen, the temperature measurement of the thermocouple corresponds to the fire resistance of the test specimen.

## Fire test

Observations were made during the test on the general behavior of the test specimen. Temperature observations were taken continually during the entire testing time.

The surface temperatures were measured on the unexposed surface of the test specimen.

The furnace temperature was determined by means of plate thermocouples uniformly distributed at a distance of approximately 100 mm from the exposed side of the test specimen.

The furnace temperature was continuously controlled so as to follow the standard time temperature curve.

The thermocouples were constructed according to the description in EN 1363-1.

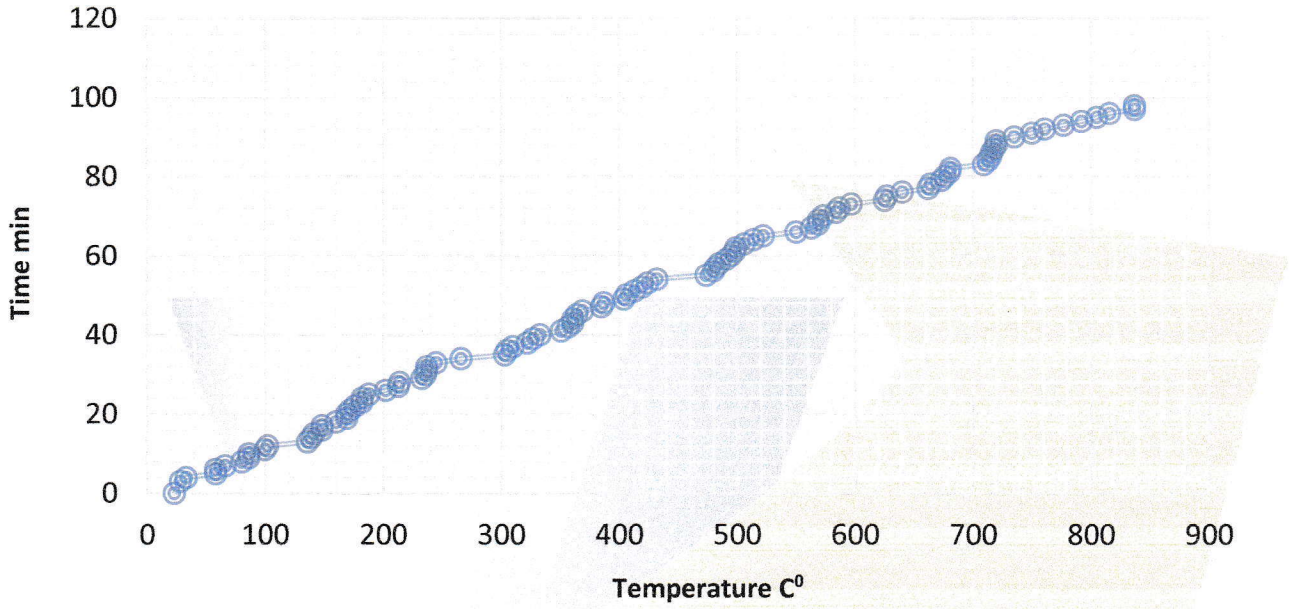
**Test Results:**

**Duration of the test was: 100 Min**

**Visual observation:**

| *Time min* | *Visual observation* | *U=unexposed side E=exposed side* |
|---|---|---|
| *0* | Test begin | - |
| *10* | Furnace T rising | E |
| *31* | Faint smoke upper edges | U |
| *45* | Temperature rises to 62 $C^0$ | U |
| *45* | Temperature rises to 364 $C^0$ | E |
| *63* | Increased smoke development from the fixed edges | U |
| *70* | Normal condition | U |
| *80* | Temperature rises to 675 $C^0$ | E |
| *80* | Temperature rises to 102 $C^0$ | U |
| *86* | Temperature rises to 716 $C^0$ | E |
| *86* | Temperature rises to 132 $C^0$ | U |
| *93* | Temperature rises to 777 $C^0$ | E |
| *93* | Temperature rises to 151 $C^0$ | U |
| *93* | Low crack sound heard | U |
| *95* | Unusual Thermocouple temperature observed | E |
| *95* | Crack observed | U |
| *100* | Fire shutoff | E |
| *100* | End of the test | - |

## Time / Temperature



**Remarks:**

- This report details, the test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in EN 1363-1, and where appropriate EN 1363-2. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application in the test method is not covered by this report.

- Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.
- All values mentioned in this report are nominal values, production tolerances are not considered.

**Laboratory manager**

**06 / 03 / 2023**

End of Report