



TESTING
No. 0013

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CERAM
**BUILDING
TECHNOLOGY**

TEST REPORT

Client's name and address

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Client's Mark Östra Grevie Gult Slaget
Your Reference Fax: Malmö 950628
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Laboratory No. SW849A/95;W2277
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REPORT OF TESTS ON RESISTANCE TO FROST DAMAGE OF A BRICK PANEL

1. SAMPLES RECEIVED

40 No clay bricks referred to as "Östra Grevie Gult Slaget" for the project "Ljungarums Trafikplats, Jönköping".

2. TEST PROCEDURE

2.1 Test Method

The test was carried out in accordance with the standard specification for cyclic freezing test, reference number BCRL BM1: 1991.

2.2 Sample Examination

Existing defects on individual bricks were noted.

2.3 Construction of Test Panel

The panel was built using the "Gullex Murbruk B" mortar supplied by the client, with 10 courses of 3 bricks in half bond, with weather pointed joints. The panel was allowed to cure in the laboratory for 23 days and then the exposed face of the panel was painted with "AGS 3502". The panel was then allowed to stand in the laboratory for a further 6 days before testing.

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2.4 Freeze/Thaw Tests

The panel was immersed in water for 7 days before installing in the freeze/thaw apparatus, which subjects one face of the panel to repeated cycles of freezing and thawing; the remaining face and sides of the panel are insulated with 25mm thick "Styrofoam".

The freeze/thaw cycle consists of 120 minutes of freezing to -15°C air temperature, 20 minutes heating with radiant heaters, 2 minutes water spray and 2 minutes to drain the spray system, after which the cycle restarts automatically. This gives 10 cycles every 24 hours and a normal test continues for 100 cycles.

2.5 Results

The panel was examined after 10 freeze/thaw cycles and was removed and thawed after 50 cycles for a more thorough examination before restarting the test. At the end of 100 cycles the panel was again removed, thawed and then dismantled and examined brick by brick for signs of frost damage.

No damage had occurred after 100 cycles had been completed.

3. SUMMARY AND CONCLUSIONS

The test reproduces as closely as is possible the most severe conditions to which bricks and mortar can be subjected in practical building situations. These conditions are most appropriate to situations where bricks classified as frost resistant (F) in BS 3921:1985 would be used. However, the results serve to indicate the relative durabilities of bricks of all qualities when subjected to freeze/thaw cycling under severe specific controlled conditions. The test procedure is accepted as being the official UK method and as such is being evaluated for the forthcoming European standard.

Experience over 20 years has shown that any brick able to survive 100 cycles of this test without showing frost damage can be confidently placed in Category "F" of BS 3921:1985, ie. durable in all building situations, including those where they are in a saturated condition and subjected to repeated freezing and thawing.

This presupposes that all recommendations of good practice made in relevant British Standards regarding the design and construction of brickwork are fully observed. Additional guidance may be offered by the manufacturer on the use of these bricks in specific situations.

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Authorised signatory:

F. Peake.
8-9-95
Mr. F. Peake

