

C O P Y

PLAINTIFF'S EXHIBIT

ASA-881

JOHNS-MANVILLE
SALES CORPORATION
BUILDING PRODUCTS DIVISION

Telephone: Keystone 6378-9

January 9, 1948

1755 Glenarm Place
Denver 2, Colo.

Case Industrial Service Co.
Room 212
514 North Stanton Street
El Paso, Texas

Subject: Insulation of Water-Walls

Gentlemen:

I am sending you, attached hereto, a copy of our specifications for insulation of water-walls. You will note that our first recommendation is either 85% Magnesite Blocks or Superex Block Insulation or a combination of Superex and Magnesite, depending upon the temperature.

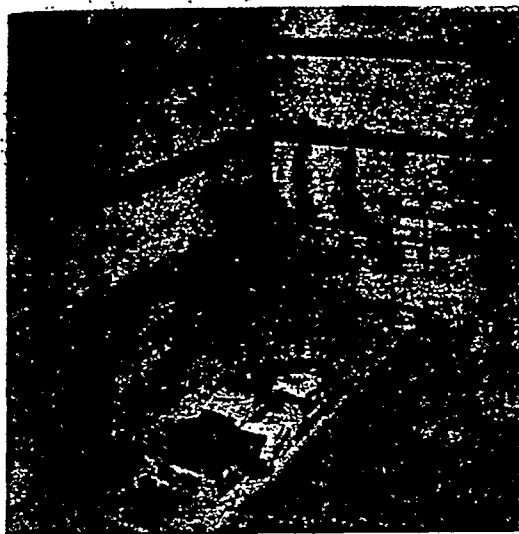
The Magnesite Blocks should not be exposed to a temperature over 600°F. Only sufficient 450 Cement is used to provide a flat surface for the blocks. We then recommend the use of Flat Transite Casing which would be little affected by any corrosive gas which could get through the insulation.

We have used the same specification for a number of years and, to my knowledge, have had no complaints on this type of construction.

Very truly yours,

(Signed) C. E. Bronson

C. E. Bronson
District Manager



Interior of insulated Transite casing erected outside air-cooled walls. Brickwork is laid after casing is completed

Air-Cooled Wall Insulation and Casing

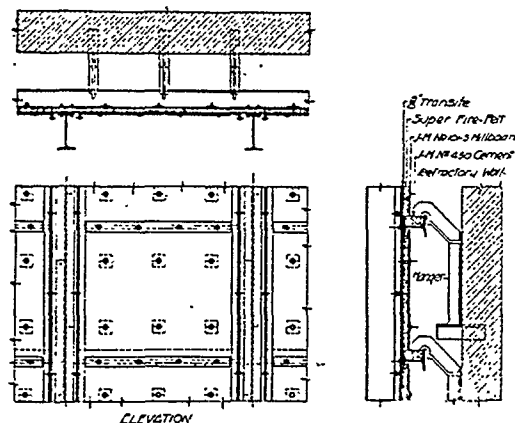
In all designs of ventilated boiler walls air is drawn over exterior brick surfaces (suspended or otherwise) either by fans, by natural draft or by burner induction. The circulation varies in the different designs, but in all designs the function of the casing over the air passages is to retain the heat recovered by the air, furnish a suitable clearance for air travel so that adequate scrubbing action is combined with the elimination of undue friction loss, and prevent leakage of air which would interrupt the flow over surfaces to be cooled. The construction should be fireproof and able successfully to withstand abrasion, ordinary mechanical impact and high temperature.

Very practical casings may be made of J-M Marinite, a structural insulating material furnished in 48" x 96" sheets. The 1" thickness is usually recommended. Joints are covered with steel battens applied over gaskets of J-M No. 106 Asbestos Sheet Millboard. The outer surface of the casing is painted, if desired.

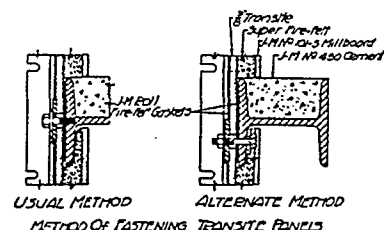
Another casing construction is $\frac{3}{8}$ " Transite, lined with Super Fire-Felt Sheets (usually 1" thick). A protective surface, next to the air space, is provided by $\frac{1}{4}$ "-thick J-M No. 101-S Asbestos Sheet Millboard. This casing, erected between the buckstays, gives superior insulation with minimum thickness. The panel construction is tight, sectionally removable and replaceable, and economical of floor space.

The materials which go to make up the panels are fabricated as units by means of through bolts with nuts on the inside, bearing on large washers pressed against the furnace surface of the millboard. Behind each buckstay the insulation and millboard may be held in place by bolts passing through the flange of the buckstay. If horizontal H-beams are used, their upper half is filled with J-M No. 450 Insulating Cement before the casing is erected.

The usual practice is to complete the application of insulation and casing prior to the erection of the brick furnace walls. In one method of application the panels are maintained in position by steel battens fastened to the horizontal H-beams. In this construction the buckstays are backed up with channels so applied that the legs of the channels extend forward from the casing. Vertical joints along the buckstays, between the buckstays and the casing panels, are sealed by light angles, slotted for bolting to the legs of the channels backing the buckstays and pressed firmly against the panels as a final operation. All joints subject to air leakage are gasketed during erection with $\frac{1}{8}$ " J-M Asbestos Roll Fire-Felt.



Insulated casing construction over air-cooled walls



Methods of fastening panels to horizontal beams

Water-Wall Insulation and Casing

Boiler water walls are insulated with about 4" of J-M 85% Magnesia Blocks, or, if the temperature is high, with Superex alone or in combination with J-M 85% Magnesia. The insulation is cased with $\frac{3}{8}$ " Transite panels, battened with steel strips, which makes a neat removable and replaceable casing of great durability. This construction results in a heat saving of more than 90 percent of the uninsulated loss.

If the exterior of the wall surface is uneven, a filler coat of J-M No. 450 Insulating Cement is first well pressed onto the surface in a thickness just sufficient to provide a flat surface. Then two layers of insulating blocks are applied with the lengths of the blocks running vertically and with all joints broken. The outside layer is pointed up with J-M No. 302 Insulating Cement and all joints are closely butted.

Casing bolts or studs protrude through the insulation and serve to support flat Transite panels which are usually fitted against the wall in vertical rows between the bolts, beginning at the bottom. Each panel has a flat steel batten bolted to its top edge, behind which the next higher panel is slipped in the course of erection. The panels are secured against the wall by continuous steel battens pressed firmly over their vertical edges and held in place by the wall bolts or studs. Pliable gaskets of J-M Asbestos Roll



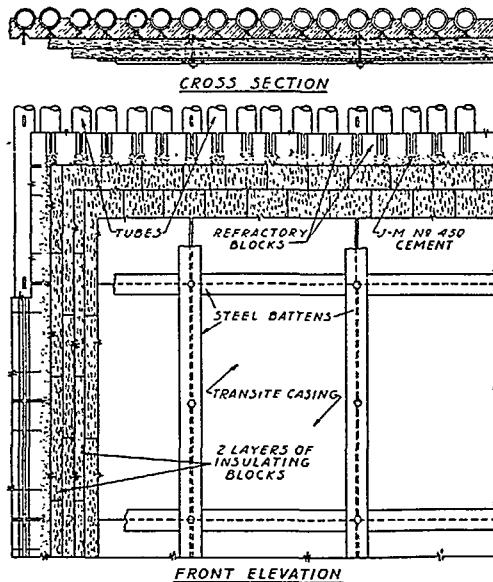
Bailey water-wall insulation with Transite casing

Fire-Felt may be used under all battens to seal the casing against air infiltration.

No cables or mesh are used with the panel type casing and the construction permits access to the tubes without disturbing the insulation anywhere on the wall except that portion which it is desired to remove. Because of weight, it has been found advisable to support steel casings, where used, independently of the water wall. Cables and lacing wire must then be employed to hold the insulation, which cannot thereby be secured as snugly against the wall as with an integral casing. Flue effect between separate casing and insulation increases loss but creates a false impression of efficiency because the casing is cooled by the air flow. Transite casings have none of these disadvantages.

If reinforced hard finish cement is used instead of Transite, the disadvantages of wire and mesh are present but there are better possibilities of an air seal than with an independently supported steel casing. The cement finish should not be used where it will be subjected to hard wear.

Sometimes No. 450 Insulating Cement is used not merely to level the surface to be insulated but is made thicker to serve as complete insulation either by itself or with a hard reinforced cement finish. The plastic insulation is less efficient than the blocks and the construction in general is less desirable.



General method of providing for water-wall insulation and casing