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A STUDY TO DETERMINE THE EFFECTIVENESS OF GREENSTREAK "LOCKSTOP" WATERSTOP BARRIER IN CONCRETE JOINTS

Prepared for:

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TEST PROGRAM

The objective of this program was to determine the watertightness of Greenstreak "Lockstop" waterstop material in construction joints of cast-in-place concrete. Due to the absence of an approved industry standard and an appropriate test method, especially designed cylindrical concrete chambers were constructed to create a jobsite condition where waterstop materials were subjected to controlled hydrostatic pressures. The hydrostatic pressure was applied in 10 psi increments for a period of 24 hours and continued for three days with a pressure up to 30 psi.

TEST PROCEDURE

Two cylindrical concrete chambers (See detail #1) were constructed in this laboratory using conventional construction techniques. The concrete chambers were formed using 24" diameter sonotubes for the exterior and 10-1/4" diameter sonotubes for the interior cell. The concrete was a 4000 psi designed mixture prepared in this laboratory. Standard 6" X 12" cylinders were cast during the construction stages of the chambers. The cylinders were cured and tested in accordance with ASTM C39, "Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens". The average compressive strength was 5600 psi at 28 days.

Construction of the test chambers was completed in three stages:

(1) Base was constructed
(2) Lower walls were built
(3) Upper walls were built

Greenstreak "Lockstop" waterstop barrier was placed in the construction joints while constructing the test chambers and was evaluated in two configurations:

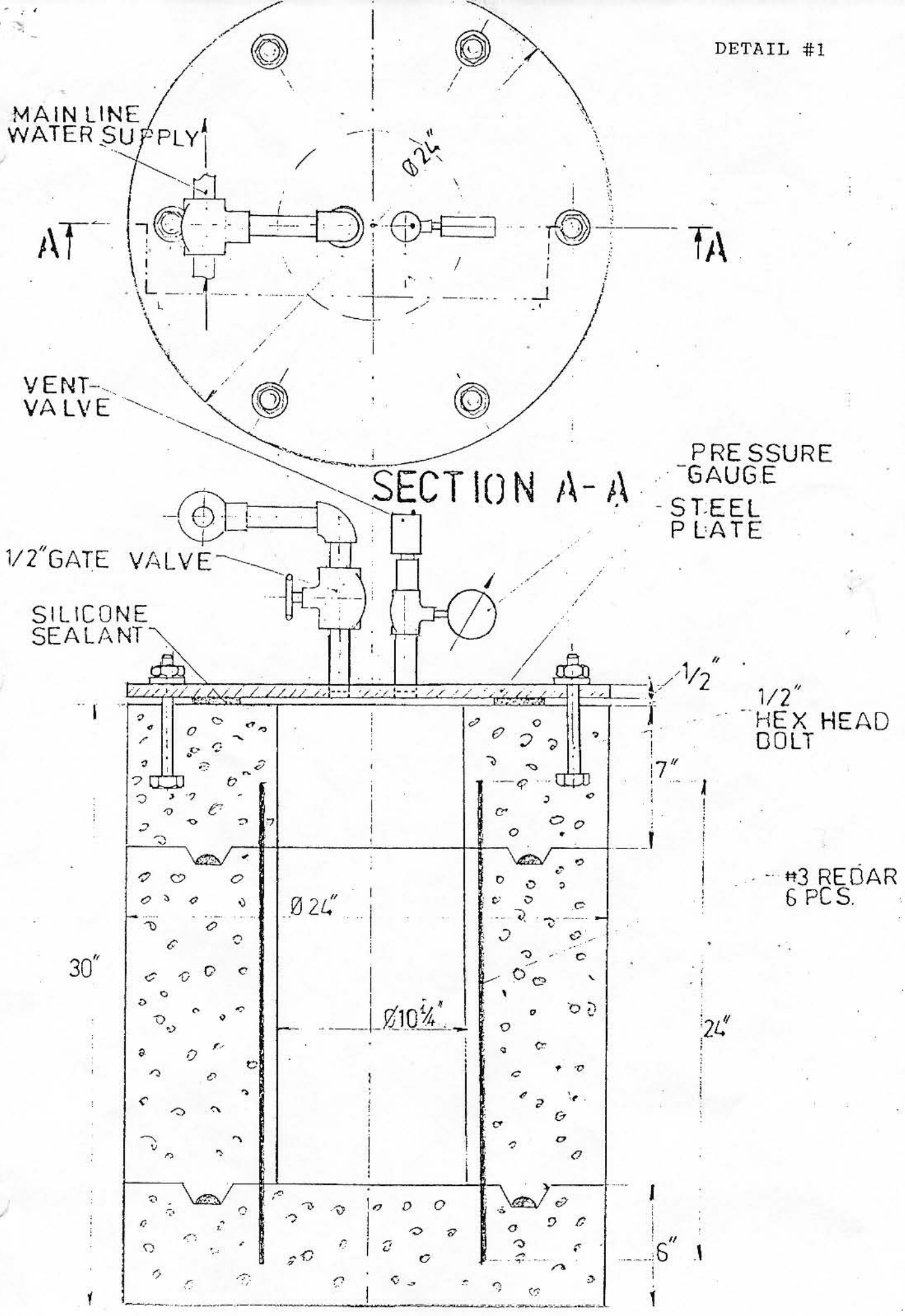
(1) One chamber with no primer - flat joint

(2) One chamber with primer - flat joint

CONCLUSION

The results of this program showed that the Greenstreak "Lockstop" waterstop used in this study was effective in developing a barrier to water intrusion at construction joints while being subjected to hydrostatic pressures up to 30 psi or a head pressure of 84 feet.

DETAIL #1


MAIN LINE
WATER SUPPLY
Ø24"
A
A
VENT-
VALVE
SECTION A-A
PRESSURE
GAUGE
STEEL
PLATE
1/2"GATE VALVE
SILICONE
SEALANT
1/2"
1/2"
HEX HEAD
BOLT
7"
#3 REBAR
6 PCS.
Ø24"
30"
Ø10¼"
24"
6"