

PROCEDURE FOR:

REPAIR AND INSTALLATION OF THE INSULCO/HEMYC
CABLE TRAY PROTECTION SYSTEM AROUND INTERFERENCES
AND OBSTRUCTIOS

PROCEDURE NUMBER:

8400.104

PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A DRAFT 11/21/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Issued for Review and Comment
B ISSUE 11/29/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add Insulco Foreword; Revise 1.0 to define testing; Revise 2.0, 3.0, 5.0, 6.1.3, 6.1.6, 6.1.7, 6.2.1, 6.2.2, and 6.3.1,

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INSULCO INCORPORATED

November 1, 1982

FOREWORD

This Procedure has been developed by B&B Insulation, Inc., an affiliate company of INSULCO, INC. and is intended for use in the installation of the HEMYC CABLE TRAY PROTECTION SYSTEM into nuclear facilities.

This Procedure may be utilized by any affiliate company of INSULCO, INC. or by any organization granted written authorization by INSULCO, INC. Refer to Section 5.4 within this Procedure for certification of the installed system requirements.

INSULCO, INCORPORATED

L. Charles Spriggs
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PROCEDURE FOR THE REPAIR AND INSTALLATION
OF THE INSULCO/HEMYC CABLE TRAY
PROTECTION SYSTEM AROUND INTERFERENCES AND OBSTRUCTIONS

1.0 PURPOSE

The purpose of this Procedure is to assure that the installation of the INSULCO/HEMYC Cable Tray Protection System is consistent with system as tested on the various qualification tests. The Fire Qualification Test, referenced as B&B CTP-1026, consisted of a One (1) Hour Fire Exposure, per ASTM E-119 criteria, including hose stream test in accordance with the AMERICAN NUCLEAR INSURERS Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS IE ELECTRICAL CIRCUITS".

2.0 SCOPE

This procedure provides the methods and guidelines to be utilized for the repair and installation of the INSULCO/HEMYC Cable Tray Protection Systems around interferences and obstructions.

3.0 REFERENCES

- 3.1 10CFR50, Appendix R
- 3.2 ANI Bulletin 5(79)
- 3.3 HEMYC Test, CTP-1026
- 3.4 B&B Installation Procedure No. 8400.101
INSTALLATION PROCEDURE FOR INSULCO/HEMYC CABLE TRAY PROTECTION SYSTEM - STRAIGHT SECTIONS
- 3.5 B&B Installation Procedure No. 8400.102
INSTALLATION PROCEDURE FOR INSULCO/HEMYC CABLE TRAY PROTECTION SYSTEM - CURVED SECTIONS
- 3.6 B&B Installation Procedure No. 8400.103
INSTALLATION PROCEDURE FOR INSULCO/HEMYC CABLE TRAY PROTECTION SYSTEM ONTO SINGLE OR MULTIPLE CONDUITS

4.0 DEFINITIONS

CONCRETE ANCHORS - site approved anchors such as HILTI used to hold blanket to walls, ceiling or partitions.

NEEDLE - a needle, curved or straight, capable of handling the thread type noted in these definitions.

PLUMBERS TAPE - flexible metal strip having pre-punched holes running the length of the strip.

THREAD - fire and heat resistant, quartz type thread such as Alpha Quartz Q-18 or Q-24.

B 5.0 RESPONSIBILITY

- 5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc. to the department responsible for installation.

This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure smooth flow of communication.

- 5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.
- 5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.
- 5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation, and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.

The quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC. or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QC Procedures. If this is the case, INSULCO QA maintains the responsibility for the QA/QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

6.0 PROCEDURE

6.1 Penetrating members

- 6.1.1 Cut affected blanket to a depth sufficient to allow the blanket to be installed around the penetrating member. (See Figure 1).
- 6.1.2 Using quartz thread and proper needle (curved needle suggested) sew the inner portion of the blanket (Siltemp or fiberglass) together around the penetrating member.
- 6.1.3 Fill any gaps in the ceramic fiber fill with additional fiber and sew the outer Siltemp material together. (See Figure 2) Stiches shall be no more than 1/2" apart.
- 6.1.4 Fill any gaps around the penetrating member with ceramic fiber.

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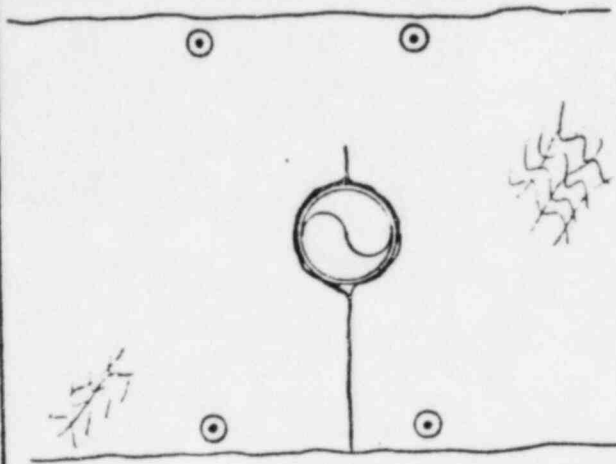


FIGURE 1

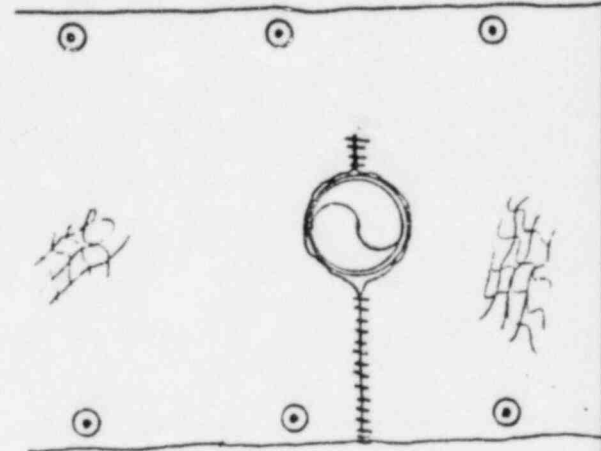


FIGURE 2

6.1.5 Cut a 3" - 4" wide piece of ceramic blanket and place around the penetrating member with 1" - 2" overlap at the ends. (See Figure 3).

6.1.6 A slightly larger section of Siltemp shall be placed over ceramic blanket and sewn top, sides and bottom to tightly seal the blanket system. (See Figure 4). Stitches shall be no more than 1/2" apart.

6.1.7 It may not be possible in all cases to get the Siltemp closed tight against the penetrating member. In these cases ensure that the ceramic blanket is forced tightly against the penetrating member by the Siltemp to prevent flame and/or heat passing into system. Clamps may be used to accomplish this, as necessary.

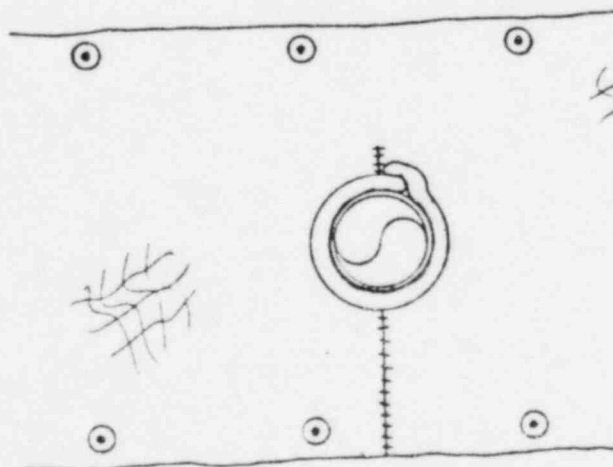


FIGURE 3

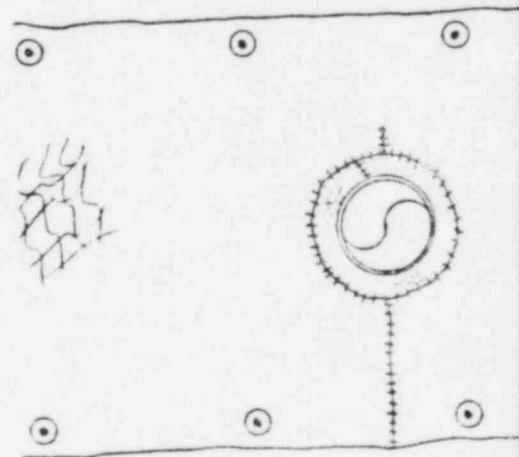


FIGURE 4

6.2 Adjoining or Supporting members

6.2.1 If possible, the adjoining or supporting member should be encapsulated within the system using the procedure outlined in Section 6.1 to seal any openings. (See Figure 5).

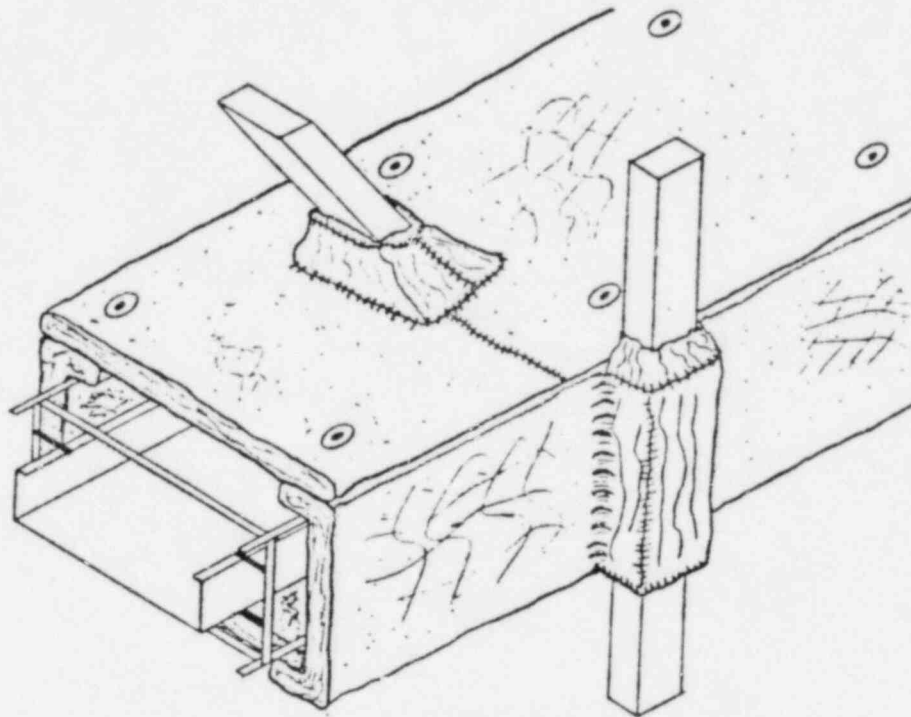


FIGURE 5

6.2.2 Where, due to size, shape or location, the adjoining or supporting member can not be encapsulated, the Installer's Site Engineer shall determine alternate methods on a case by case basis. Such alternates shall be within the parameters established by the INSULCO/HEMYC fire testing.

6.3 Wall, Ceiling or Partition Interferences

6.3.1 Where walls, ceilings or partitions prevent the installation of the full system (framework and blanket) the blanket may be installed as shown in Figure 6. Extra blanket supports may be required as determined by the Installer's Site Engineer.

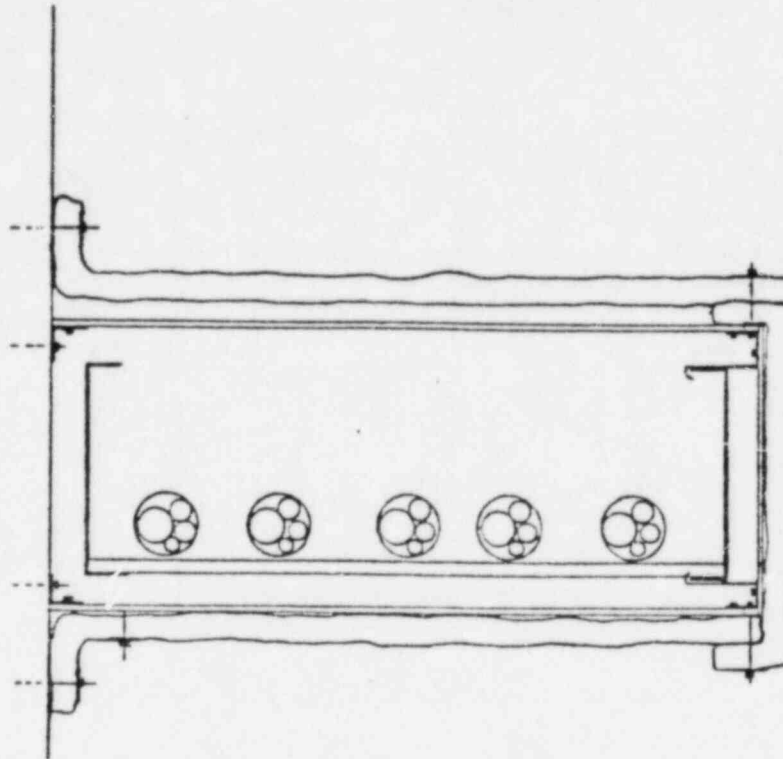


FIGURE 6

6.3.2 Concrete anchors shall be placed no more than 9" apart.

6.3.3 Plumbers tape must be installed in the areas where the blanket system is attached to a wall or ceiling. The plumbers tape is to be installed over the studs after the blanket is installed and prior to the fender washer and locknut. (See Figure 7). Tape should be kept as tight as possible to prevent the blanket from sagging away from the wall creating a passage for heat and/or flame. Additional holes in plumbers tape may be made as necessary to accommodate variations in stud placement.

PLUMBERS TAPE

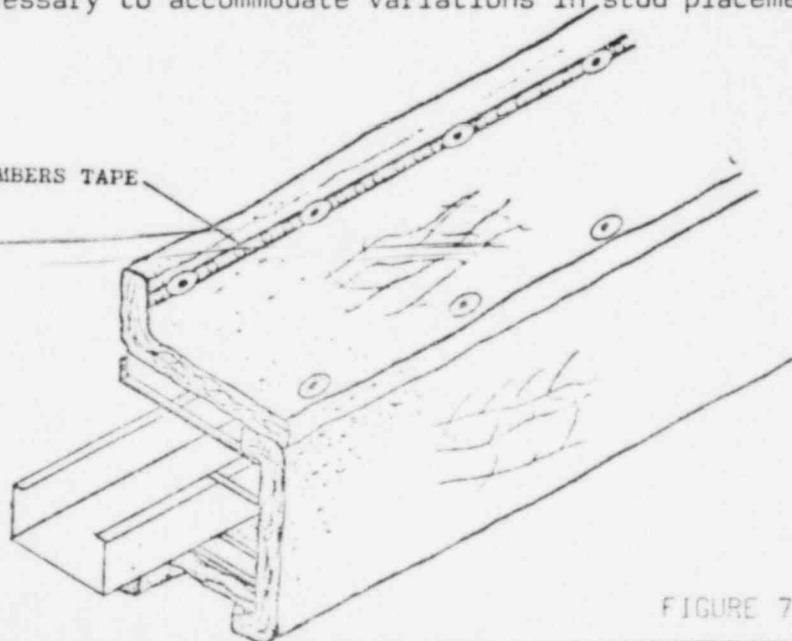


FIGURE 7

6.4 Repair Procedure

6.4.1 Responsible parties shall inspect damaged blanket to determine the extent of damage and if repair or replacement is required. Order replacement blanket if damage is extensive.

6.4.2 Remove damaged blanket to work area.

6.4.3 Replace any damaged or deformed framework/support materials utilizing methods outlined in B&B Insulation procedures 8400.101, 8400.102 and/or 8400.103.

6.4.4 Rips

6.4.4.1 Sew the interior fabric, if necessary, the full length of the ripped fabric with stitches no more than 1/2" apart. Extra stitches will be needed to each end of rip to ensure that the rip does not "creep".

6.4.4.2 Replace any ceramic fiber lost due to damage. Ensure that no gaps remain in fiber filler and that proper thickness is maintained.

6.4.4.3 Sew the exterior fabric together as outlined in Section 6.4.4.1. If any gaps are found in fabric it may be necessary to insert an appropriately sized piece of fabric inside the system prior to sewing fabric closed.

6.4.4.4 Reinstall blanket as outlined in B&B Procedure 8400.101

6.4.5 Holes or large tears

6.4.5.1 Patches of the proper type fabric, Siltemp or fiber-glass, should be cut to a size sufficient to cover the hole with an approximate 2" overlap onto undamaged fabric.

6.4.5.2 Repair the interior surface first, if necessary, by placing patch over hole and sewing around the perimeter of patch with stitches no more than 1/2" apart.

6.4.5.3 Replace any ceramic fiber as necessary. Ensure that no gaps remain and that proper thickness is maintained.

6.4.5.4 Place the exterior patch over the hole and sew as noted in Section 6.4.5.2.

6.4.5.5 Reinstall blanket as outlined in B&B Procedure 8400.101 using new locknuts on studs.