

**CMP REPAIR METHOD A- METAL SEALER**

PROTECTIVE COATING REPAIR USING A METAL SEALER: CMP REPAIR METHOD A IS INTENDED FOR REPAIRING AREAS OF CORRUGATED METAL PIPES THAT HAVE NOT EXPERIENCED ANY SIGNIFICANT SECTION LOSS, BUT HAS EXPERIENCED MINOR SURFACE RUST, FRECKLED RUST, LEACHING, OR LOSS OF GALVANIZATION. REPAIR AREAS AS SHOWN IN THE PLANS PER ONE OF THE FOLLOWING MANUFACTURES PRODUCTS:

REPAIR USING DIAMANT/STRONGHOLD ONE METAL SEALER: CLEAN SURFACE TO BE TREATED WITH DIAMANT CLEANER #1417 TO REMOVE ANY OIL, GREASE OR DIRT. APPLY DICTHOL 1546 BLUE BY BRUSH OR BY SPRAY METHOD PER MANUFACTURER APPROVED METHOD. APPLY A MINIMUM OF 2 COATS AT 1 MINUTE INTERVALS FOR A TOTAL THICKNESS OF 0.003". MULTIPLE COATS MAY BE NEEDED UNTIL SEALER BEGINS TO BUILD. DO NOT ALLOW TO DRY BETWEEN COATS.

OR

REPAIR USING DEVCON EZ SPRAY CERAMIC RED/BLUE: CLEAN THE SURFACE WITH DEVCON CLEANER BLEND 300 TO REMOVE ANY OIL, GREASE OR DIRT. GRIT BLAST SURFACE WITH 8-40 MESH TO AN SSPC SP-10 PROFILE THEN LEAVE OVERNIGHT TO ALLOW ANY SALT TO SWEAT TO THE SURFACE. REPEAT BLASTING NEXT DAY. PERFORM CHLORIDE PENETRATION TEST TO DETERMINE SOLUBLE SALT CONTENT IS LESS THAN 40 PPM. USE SALT REMOVER SUCH AS CHLOR-RID OR APPROVED EQUAL TO REMOVE SALTS. CLEAN SURFACE AGAIN WITH DEVCON CLEANER BLEND 300. APPLY THE FIRST COAT OF EZ SPRAY CERAMIC AT A THICKNESS OF APPROXIMATELY 15 MIL (0.015 IN). APPLY A SECOND COAT OF EZ SPRAY CERAMIC AT A THICKNESS OF APPROXIMATELY 15 MIL (0.015 IN) DURING THE RE-COAT TIME PERIOD OF 4-6 HOURS AFTER THE FIRST COAT WAS APPLIED TO ENSURE PROPER ADHESION.

OR

REPAIR USING LOCTITE PC 7693 COLD GALVANIZING COATING COMPOUND: CLEAN THE SURFACE WITH LOCTITE 7840 TO REMOVE ANY OIL GREASE OR DIRT. GRIT BLAST SURFACE WITH 8-40 MESH TO AN SSPC SP-10 PROFILE THEN LEAVE OVERNIGHT TO ALLOW ANY SALT TO SWEAT TO THE SURFACE. REPEAT BLASTING NEXT DAY. PERFORM CHLORIDE PENETRATION TEST TO DETERMINE IF SOLUBLE SALT CONTENT IS LESS THAN 40 PPM. USE SALT REMOVER SUCH AS CHLOR-RID OR APPROVED EQUAL TO REMOVE SALTS. APPLY TWO COATS OF LOCTITE PC 7693 GALVANIZING COATING COMPOUND AT 15 MINUTE INTERVALS.

**CMP REPAIR METHOD B- METAL REPAIR OF SECTION LOSS**

CMP REAIR METHOD B IS INTENDED TO USE A METAL REPAIR PUTTY FOR REPAIRING AREAS OF CORRUGATED METAL PIPES THAT HAVE EXPERIENCED MINOR TO MODERATE SECTION LOSS AS EVIDENT BY DARK BROWN AREAS, LOSS OF MATERIAL WITH DEEP PITS, AND/OR SMALL FLAKING METAL. REPAIR PER ONE OF THE FOLLOWING MANUFACTURERS PRODUCTS:

REPAIR USING DIAMANT/STRONGHOLD ONE MATERIAL REPACOAT 2447: GRIT BLAST AREAS WITH AN 8-40 MESH GRIT TO AN SSPC SP-10 PROFILE AND TREAT WITH ONE COAT OF DICTHOL 1546 PER REPAIR METHOD A FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. APPLY REPACOUR 2447 TO FILL THE AREAS OF SECTION LOSS AND RUSTING PLUS AN ADDITIONAL 2" PERIMETER IN ALL DIRECTIONS. THE TOTAL COATING SHALL FILL THE DETERIORATED AND HAVE A MINIMUM THICKNESS OF 0.0125" THICK.

OR

REPAIR USING DEVCON PLASTIC STEEL LIQUID AND EZ SPRAY CERAMIC RED/BLUE: CLEAN THE SURFACE WITH DEVCON CLEANER BLEND 300 TO REMOVE ANY OIL, GREASE OR DIRT. GRIT BLAST TO AN SSPC SP-10 PROFILE FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. APPLY PLASTIC STEEL LIQUID (B) TO FILL THE AREAS OF SECTION LOSS AND RUSTING FOR A DISTANCE OF 2" PAST THE ORIGINAL LIMITS OF RUST. THE SECTION LOSS SHALL BE FILLED PLUS AN ADDITIONAL MINIMUM THICKNESS OF 1/8" OF MATERIAL SHALL BE SPREAD OVER THE RUSTED/REPAIRED AREA AND THE 2" PERIMETER AREA. APPLY THE FIRST COAT OF EZ SPRAY CERAMIC AT A THICKNESS OF APPROXIMATELY 15 MIL (0.015 IN) DURING THE RE-COAT TIME PERIOD OF 2-4 HOURS AFTER THE PLASTIC STEEL LIQUID IS APPLIED TO ENSURE PROPER ADHESION. APPLY A SECOND COAT OF EZ SPRAY CERAMIC AT A THICKNESS OF APPROXIMATELY 15 MIL (0.015 IN) DURING THE RE-COAT TIME PERIOD OF 4-6 HOURS AFTER THE FIRST COAT WAS APPLIED TO ENSURE PROPER ADHESION. EZ SPRAY CERAMIC SHALL BE PLACED 12" PAST THE LIMITS OF RUST.

OR

CLEAN THE SURFACE WITH LOCTITE 7840 TO REMOVE ANY OIL, GREASE, OR DIRT. REPAIR USING LOCTITE EA 3471 NA (FIXMASTER STEEL PUTTY): GRIT BLAST AREAS WITH AN 8-40 MESH GRIT TO AN SSPC SP-10 PROFILE AND TREAT WITH EITHER PRODUCT IN CMP REPAIR METHOD A FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. APPLY LOCTITE EA 3471 TO FILL THE AREAS OF SECTION LOSS AND RUSTING FOR A DISTANCE OF 2" PAST THE ORIGINAL LIMITS OF RUST. THE SECTION LOSS SHALL BE FILLED PLUS AN ADDITIONAL MINIMUM THICKNESS OF 1/16" OF MATERIAL SHALL BE SPREAD OVER THE RUSTED/REPAIRED AREA AND THE 2" PERIMETER AREA.

OR

CLEAN THE SURFACE WITH LOCTITIE 7840 TO REMOVE ANY GREASE OR DIRT. GRIT BLAST AREAS WITH AN 8-40 MESH GRIT TO AN SSPC SP-10 PROFILE. APPLY LOCTITIE EA 3471 TO FILL THE AREAS OF SECTION LOSS AND RUSTING PLUS AND ADDITIONAL 4" PERIMETER IN ALL DIRECTIONS. TREAT WITH ONE COAT OF LOCTITE PC 7693 GALVANIZING COATING COMPOUND PER REPAIR METHOD A FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. THE SECTION LOSS SHALL BE FILLED PLUS AN ADDITIONAL MINIMUM THICKNESS OF 1/16" OF MATERIAL SHALL BE SPREAD OVER THE REPAIR AREA.

**CMP REPAIR METHOD C- METAL REPAIR OF SECTION LOSS WITH PERFORATIONS**

CMP REPAIR METHOD C IS INTENDED FOR REPAIRING AREAS OF CORRUGATED METAL PIPES THAT ARE PERFORATED OR ARE VERY THIN AFTER GRIT BLASTING AS EVIDENT BY DARK BROWN LAYERED RUST AND OR

THE PRESENCE OF HOLES. THIS REPAIR IS NOT INTENDED TO ACT AS A FULLY STRUCTURAL REPAIR, BUT IT IS INTENDED TO STOP CORROSION AND PREVENT BACKFILL INFILTRATION.

REPAIR AS FOLLOWS:

REPAIR USING DIAMANT/STRONGHOLD ONE MATERIAL MM1018 PUTTY: FILL HOLES THAT ARE LEAKING BACKFILL WITH EXPANDABLE FOAM, HYDRAULIC CEMENT, OR OTHER REPAIR METHODS AS NECESSARY. THE FILL MATERIAL SHALL NOT REDUCE THE REPAIR THICKNESS BY EXTENDING INTO THE THICKNESS OF THE CONDUIT WALL REPAIR. GRIT BLAST AREAS WITH AN 8-40 MESH GRIT TO AN SSPC SP-10 PROFILE AND TREAT WITH ONE COAT OF DICTHOL 1546 PER REPAIR METHOD A FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. APPLY MM1018 METAL POLYMER PUTTY TO FILL THE AREAS OF SECTION LOSS AND RUSTING PLUS AN ADDITIONAL 4" PERIMETER IN ALL DIRECTIONS. THE SECTION LOSS SHALL BE FILLED PLUS AN ADDITIONAL MINIMUM THICKNESS OF 1/16" OF MATERIAL SHALL BE SPREAD OVER THE REPAIR AREA. AN 18 GAGE, GALVANIZED METAL MESH WITH A 1/2" GRID SPACING SHALL BE PRESSED INTO THE REPAIR AREA CONFORMING TO THE METAL CORRUGATIONS. THE METAL MESH SHALL EXTEND 2" PAST THE RUSTED AREAS. ADDITIONAL MATERIAL SHALL BE PLACED IN A SECOND COATING TO ENSURE THE METAL MESH IS IN FULLY ENGULFED BY THE PUTTY AND HAS A 1/16" MINIMUM THICKNESS OVERTOP OF THE MESH.

OR

REPAIR USING DEVCON PLASTIC STEEL PUTTY AND EZ SPRAY CERAMIC RED/BLUE: FILL HOLES THAT ARE LEAKING BACKFILL WITH EXPANDABLE FOAM, HYDRAULIC CEMENT, OR OTHER APPROVED REPAIR METHODS AS NECESSARY. THE FILL MATERIAL SHALL NOT REDUCE THE REPAIR THICKNESS BY EXTENDING INTO THE THICKNESS OF THE CONDUIT WALL REPAIR. CLEAN THE SURFACE WITH DEVCON CLEANER BLEND 300 TO REMOVE ANY OIL, GREASE OR DIRT. GRIT BLAST TO AN SSPC SP-10 PROFILE FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. APPLY DEVCON PLASTIC STEEL PUTTY (A) TO FILL THE AREAS OF SECTION LOSS AND RUSTING PLUS AN ADDITIONAL 4" PERIMETER IN ALL DIRECTIONS. THE SECTION LOSS SHALL BE FILLED PLUS AN ADDITIONAL MINIMUM THICKNESS OF 1/16" OF MATERIAL SHALL BE SPREAD OVER THE REPAIR AREA. AN 18 GAGE, GALVANIZED METAL MESH WITH A 1/2" GRID SPACING SHALL BE PRESSED INTO THE REPAIR AREA CONFORMING TO THE METAL CORRUGATIONS. THE METAL MESH SHALL EXTEND 2" PAST THE RUSTED AREAS. ADDITIONAL MATERIAL SHALL BE PLACED IN A SECOND COATING TO ENSURE THE METAL MESH IS IN FULLY ENGULFED BY THE PUTTY AND HAS A 1/16" MINIMUM THICKNESS OVERTOP OF THE MESH. FOR A DISTANCE OF 12" AROUND THE RUSTED AREA APPLY THE FIRST COAT OF EZ SPRAY CERAMIC AT A THICKNESS OF APPROXIMATELY 15 MIL (0.015 IN) DURING THE RECOAT TIME PERIOD OF 2-4 HOURS AFTER THE PLASTIC STEEL PUTTY IS APPLIED TO ENSURE PROPER ADHESION. APPLY A SECOND COAT OF EZ SPRAY CERAMIC AT A THICKNESS OF APPROXIMATELY 15 MIL (0.015 IN) DURING THE RECOAT TIME PERIOD OF 4-6 HOURS AFTER THE FIRST COAT WAS APPLIED TO ENSURE PROPER ADHESION.

OR

REPAIR USING LOCTITE EA 3471 NA (FIXMASTER STEEL PUTTY): FILL HOLES THAT ARE LEAKING BACKFILL WITH EXPANDABLE FOAM (LOCTITE TITE FOAM), HYDRAULIC CEMENT, OR OTHER REPAIR METHODS AS NECESSARY. THE FILL MATERIAL SHALL NOT REDUCE THE REPAIR THICKNESS BY EXTENDING INTO THE THICKNESS OF THE CONDUIT WALL. CLEAN THE SURFACE WITH LOCTITE 7840 TO REMOVE ANY OIL, GREASE, OR DIRT FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. GRIT BLAST AREAS WITH AN 8-40 MESH GRIT TO AN SSPC SP-10 PROFILE. APPLY LOCTITE FIXMASTER STEEL PUTTY TO FILL THE AREAS OF SECTION LOSS AND RUSTING PLUS AN ADDITIONAL 4" PERIMETER IN ALL DIRECTIONS. AN 18 GAUGE FALVANIZED METAL MESH WITH 1/2" GIRD SPACING SHALL BE PRESSED INTO THE REPAIR AREA CONFORMING TO THE METAL CORRUGATIONS. THE METAL MESH SHALL EXTEND 2" PAST THE RUSTED AREA. TREAT WITH ONE COAT OF

LOCTITE PC 7693 GALVANIZING COATING COMPOUND PER REPAIR METHOD A FOR A DISTANCE OF 12" PAST THE LIMITS OF RUST. THE SECTION LOSS SHALL BE FILLED PLUS AN ADDITIONAL MINIMUM THICKNESS OF 1/16" OF MATERIAL SHALL BE SPREAD OVER THE REPAIR AREA. AN 18 GAGE, GALVANIZED METAL MESH WITH A 1/2" GRID SPACING SHALL BE PRESSED INTO THE REPAIR AREA CONFORMING TO THE METAL CORRUGATIONS. THE METAL MESH SHALL EXTEND 2" PAST THE RUSTED AREA. ADDITIONAL MATERIAL SHALL BE PLACED IN A SECOND COATING TO ENSURE THE METAL MESH IS FULLY ENGULFED BY THE PUTTY AND HAS A 1/16" MINIMUM THICKNESS OVERTOP OF THE MESH.

**MOCK UP**

FOR REPAIR METHOD A, REPAIR METHOD B, AND REPAIR METHOD C, THE CONTRACTOR SHALL CONDUCT A SEPARATE MOCK-UP REPAIR USING THE PRODUCTS CHOSEN BY THE CONTRACTOR FOR EACH REPAIR METHOD. THE MOCK-UP SHALL BE CONDUCTED IN THE PRESENCE OF THE ENGINEER AND THE PRODUCT'S REPRESENTATIVE FOR ACCEPTANCE OF THE APPLICATION, MEANS AND METHODS. THIS MOCK-UP MAY BE CONDUCTED ON A REPRESENTATIVE SECTION OF THE DEFECTIVE PIPE AT A LOCATION AGREED UPON BY THE ENGINEER. UPON ACCEPTANCE OF THE MOCK-UP BY THE ENGINEER, THE CONTRACTOR MAY PROCEED WITH PROJECT REPAIRS.

DESIGN AGENCY



DESIGNER

REVIEWER

PROJECT ID

SHEET TOTAL