

ADHESIVE SHALL BE APPLIED TO BOTH THE STEEL AND ELASTOMERIC BONDING SURFACES USING A STIFF BRUSH IF NECESSARY TO ACHIEVE A COMPLETE AND RELATIVELY UNIFORM COATING. THEN THE BULBED EDGES OF THE ELASTOMERIC SEAL SHALL BE INSERTED INTO THE ANCHOR GROOVES. AFTER INSTALLATION, EXCESS ADHESIVE SHALL BE REMOVED FROM THE EXPOSED SEAL SURFACES.

SHOP DRAWINGS: SHOP DRAWINGS FOR THE EXPANSION JOINTS ARE REQUIRED. THE MANUFACTURER OF THE EXPANSION JOINTS SHALL SUBMIT COMPLETE DIMENSIONAL DETAILS OF THE PROPOSED JOINT RETAINERS FOR APPROVAL. THE CONTRACTOR SHALL COORDINATE THE PREPARATIONS OF THE STRUCTURAL STEEL AND EXPANSION JOINT SHOP DRAWINGS TO ENSURE COMPLETE GEOMETRICAL AND DIMENSIONAL COMPATIBILITY.

PAINTING: THE UPPER EXPOSED PORTIONS OF THE EXPANSION JOINTS SHALL BE PAINTED IN CONFORMANCE WITH ITEM 514 AND THE PROPOSAL NOTE "FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU.

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE SEALED LENGTH OF JOINTS MEASURED ALONG THE JOINT CENTERLINE. PAYMENT PER LINEAR FOOT FOR ITEM 516, "STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS" INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH THE JOINTS COMPLETE AND ACCEPTABLE IN PLACE INCLUDING THE ELASTOMERIC EXTRUSIONS AND STEEL RETAINERS, THE STRUCTURAL STEEL JOINT ARMOR, INCLUDING PLATES AND BARS.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE FOR:

ITEM	UNIT	DESCRIPTION
516	LINEAR FOOT	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS.

PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN. PSI	2000	D412
ELONGATION AT BREAK, MIN. PCT	250	D412
HARDNESS, TYPE A DUROMETER	50 MIN 65 MAX	D2240 (MODIFIED)
OVEN AGING, 70 HR. AT 212° F		
TENSILE STRENGTH, LOSS MAX.	20 %	D573
ELONGATION, LOSS MAX.	20 %	
HARDNESS, TYPE A DUROMETER (POINTS CHANGE)	0 TO +10	
OZONE RESISTANCE 20 PERCENT STRAIN, 300 PPHM, IN AIR AT 104° F (WIPED WITH TOLUENE TO REMOVE SURFACE CONTAMINATION)	NO CRACKS	D1149

ITEM 516 - STRUCTURAL STEEL EXPANSION JOINTS

THIS ITEM SHALL INCLUDE ALL WORK REQUIRED TO INSTALL SIDEWALK EXPANSION JOINTS AT THE REAR ABUTMENT AS DETAILED ON SECTIONS C-C, F-F, AND G-G, IN SHEETS [18/21] AND [19/21] AND AS DESCRIBED UNDER ITEM 516 - STRUCTURAL STEEL EXPANSION JOINTS IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

PAYMENT SHALL BE MADE UNDER ITEM 516 - STRUCTURAL STEEL EXPANSION JOINTS.

ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN.

THIS ITEM SHALL INCLUDE ALL WORK REQUIRED TO INSTALL JOINT SEALS BETWEEN THE CURBS AT THE FORWARD ABUTMENT, AS DETAILED ON SECTION E-E, SHEET [19/21] AND AS DESCRIBED UNDER ITEM 516 - STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS IN THESE GENERAL NOTES. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL STEEL BARS, STEEL RETAINERS, ELASTOMERIC STRIP SEALS, AND ANY ADDITIONAL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THIS WORK.

PAYMENT SHALL BE MADE UNDER ITEM 516-VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN.

ITEM SPECIAL - RESET BEARINGS

RESETTING OF THE REAR ABUTMENT BEARINGS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SHEETS [20/21] OF THE PLANS. IN ADDITION THE CONTRACTOR SHALL CHECK THE ANCHOR BOLT NUTS AT THE FIXED BEARINGS ON PIER 3 AND TIGHTEN ANY LOOSE NUTS. THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR FOR APPROVAL HIS PLAN FOR JACKING, BRACING, SHORING AND RESETTING THE BEARINGS WHILE PORTIONS OF THE BRIDGE REMAIN OPEN TO TRAFFIC. THE ENTIRE SUPERSTRUCTURE SHALL BE RAISED AT THE ABUTMENT AT ONE TIME. ALL THE SUPPORTS REQUIRED FOR THE RAISING OF THE SUPERSTRUCTURE SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.

THIS ITEM OF WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM SPECIAL - RESET BEARINGS. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THIS WORK.

ITEM SPECIAL - LOW-PRESSURE EPOXY INJECTING DELAMINATED CONCRETE

I. DESCRIPTION: THIS WORK SHALL CONSIST OF LOW-PRESSURE EPOXY INJECTION OF DELAMINATED BOTTOM COVER CONCRETE OF BRIDGE DECKS IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND MANUFACTURERS RECOMMENDATIONS AS DIRECTED BY THE ENGINEER.

II. MATERIALS: THE PASTE AND INJECTION EPOXIES SHALL BE MATERIALS PRODUCED IN THE UNITED STATES BY A COMPANY RECOGNIZED AS AN ESTABLISHED MANUFACTURER OF CHEMICAL PRODUCTS. THE EPOXY INJECTION SYSTEM SHALL BE ONE THAT IS DESCRIBED IN BROCHURES OR TECHNICAL PAPERS WHICH CONTAIN DOCUMENTATION OF SUCCESSFUL REPAIRS IN SIMILAR APPLICATION SITUATIONS.

THE EPOXY INJECTION RESIN SHALL BE CAPABLE OF APPLICATION, POSITIVE ADHERENCE AND STRENGTH DEVELOPMENT WHEN APPLIED TO MOIST OR WET SURFACES AT TEMPERATURES OF 33°F (1°C) AND ABOVE; HOWEVER, FIELD APPLICATIONS PREFERABLY SHALL BE MADE TO DRY SURFACES.

WHEN MANUFACTURED, THE FORMULATIONS SHALL CONTAIN NO UNREACTIVE DILUENTS, SOLVENTS OR OTHER FILLERS AND SHALL BE 100% SOLIDS. THE EPOXIES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

1. INJECTION EPOXY ADHESIVE
 - A. COMPONENT A SHALL BE MODIFIED EPOXY RESIN.
 1. VISCOSITY* @ 40 ± 3°F 1,000 - 8,000 CPS
 2. VISCOSITY* @ 77 ± 3°F 50 - 700 CPS
 3. ASH CONTENT 1% MAX.
 4. SHELF LIFE, ORIGINAL UNOPENED SEALED CONTAINER (SEE NOTE A) 18 MONTHS

B. COMPONENT B SHALL BE THE CURING AGENT CONTAINING AMINE HARDENERS AND MODIFIERS.

1. VISCOSITY* @ 40 ± 3°F 400 - 1,400 CPS
2. VISCOSITY* @ 77 ± 3°F 100 - 200 CPS
3. SHELF LIFE, ORIGINAL UNOPENED SEALED CONTAINER (SEE NOTE A) 18 MONTHS


NOTE A. THE MANUFACTURER SHALL FURNISH ALL A AND B COMPONENT MATERIALS BY BATCH NUMBER AND DATE AND CERTIFIED TO BE FRESH AND WITHIN TWO (2) MONTHS OF MANUFACTURED AT TIME OF SHIPPING.

C. COMBINED COMPONENTS.

1. INITIAL VISCOSITY* @ 77°F (25°C) 100 - 600 CPS
2. POTLIFE 60 G @ 77°F 13 - 25 MINUTES
60 G @ 100°F 5 - 10 MINUTES

D. CURED ADHESIVE, WHEN CURED FOR 7 DAYS @ 77 ± 3°F, SHALL HAVE THE FOLLOWING PROPERTIES:

1. COMPRESSIVE PROPERTIES (ASTM D 695)
 - A. COMPRESSIVE YIELD STRENGTH 15,000 PSI MIN.
 - B. COMPRESSIVE MODULUS OF ELASTICITY 200,000 TO 350,000 PSI
 2. TENSILE PROPERTIES (ASTM D 638)
 - A. TENSILE ULTIMATE STRENGTH 8,000 PSI MIN.
 - B. TENSILE ELONGATION AT BREAK 1.0% MIN.
 - C. TENSILE MODULUS OF ELASTICITY 500,000 PSI MIN.
 3. FLEXURAL PROPERTIES (ASTM D 790)
 - A. FLEXURAL MODULUS OF ELASTICITY 550,000 PSI MIN.
 - B. FLEXURAL MODULUS OF RUPTURE 10,000 PSI MIN.
 4. BOND STRENGTH
 - A. SLANT SHEAR STRENGTH (F'C = 5,000 PSI CONCRETE) 3,500 PSI MIN.
 5. HEAT DEFLECTION TEMPERATURE (ASTM D 648) (CREEP RESISTANCE)
 - A. CURED 28 DAYS @ 77 ± 3°F 135°F
- *BROOKFIELD RVT SPINDLE NO. 2 @ 20 RPM

 COLPETZER-THOMAS, INC. AN ENGINEERING GROUP <small>WILLOUGHBY • MENTOR • NORTH CANTON • STEUBENVILLE • LORAIN</small>						3 / 21
GENERAL NOTES LAK-615-0402 LAKE COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JPR	R.L.B.	R.L.B.	RJC	JSA	9-22-88	