



# Cherry Creek School District Technical Guidelines - 2020

## DIVISION 07 – THERMAL AND MOISTURE PROTECTION

### SECTION 07 11 13 – BITUMINOUS DAMPPROOFING

#### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Bituminous Dampproofing - Use at external side of crawl space foundation walls from bottom of foundation to top of grade beam, if exterior earth grade is at same elevation as top of grade beam.
- B. Referenced Standards/Minimum Criteria:
  - 1. None.
- C. Submittal Required:
  - 1. Product data.
- D. Restrictions/Critical Criteria:
  - 1. Materials to be EPA VOC compliant.
  - 2. Maintain substrate temperature as per manufacturer's recommendation.
  - 3. Application shall be by a factory authorized applicator.

#### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products:
  - 1. "Fibered Dampproofing" by Karnak Corp. [www.karnakcorp.com](http://www.karnakcorp.com), for installation by brush, roller, or spray.
  - 2. Approved substitute.

### 07 13 26 – SELF-ADHERING SHEET WATERPROOFING

#### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Self-adhering sheet membrane waterproofing
  - 2. Note: Either fluid-applied or sheet membrane waterproofing may be used on outside of exterior foundation walls and elevator pit walls where finish grade is above the interior floor line at occupied or usable spaces.
- B. Referenced Standards/Minimum Criteria:
  - 1. None.



# Cherry Creek School District Technical Guidelines - 2020

- C. Submittals Required:
  - 1. Product data.
  
- D. Restrictions/Critical Criteria:
  - 1. Installers must be approved / trained by manufacturer.

## PART 2 - PRODUCTS

- A. Acceptable Manufacturers and Systems - Sheet Membrane Waterproofing:
  - 1. "PW-100/60" by Protecto Wrap: [www.protectowrap.com](http://www.protectowrap.com).
  - 2. "Bituthene Post-applied Waterproofing" by GCP Applied Technologies: [www.gcpat.com](http://www.gcpat.com).
  - 3. "Miradri 860/861 Sheet Membrane Waterproofing System" by Carlisle Coatings and Waterproofing: [www.carlisleccw.com](http://www.carlisleccw.com).
  - 4. Approved substitute.

## 07 14 00 – FLUID-APPLIED WATERPROOFING

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Fluid applied waterproofing.
  - 2. Note: Either fluid-applied or sheet membrane waterproofing may be used on outside of exterior foundation walls and elevator pit walls where finish grade is above the interior floor line at occupied or usable spaces.
  
- B. Referenced Standards/Minimum Criteria:
  - 1. None.
  
- C. Submittals Required:
  - 1. Product data.
  
- D. Restrictions/Critical Criteria:
  - 1. Materials are to be EPA VOC compliant.
  - 2. Maintain substrate temperature at minimum of 55 degrees F during installation.
  - 3. Applicator Qualifications: Application shall be by a factory authorized applicator. Work shall be supervised by an authorized manufacturer's representative who shall be on the job site during application.
  - 4. Concrete surfaces are required to be properly cured (per manufacturers requirements) prior to installation of waterproofing materials.



# Cherry Creek School District Technical Guidelines - 2020

## PART 2 - PRODUCTS

- A. Acceptable Manufacturers and Systems - Fluid-Applied Waterproofing:
  - 1. "TREMproof 260" by Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com](http://www.tremcosealants.com).
  - 2. Carlisle "CCW – 525" by Carlisle Coatings & Waterproofing: [www.carlisleccw.com](http://www.carlisleccw.com).
  - 3. Approved substitute.
- B. Protection Board: Per waterproofing manufacturer's recommendations.

## 07 18 00 – EQUIPMENT ROOM DECK COATING

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Coating on floors and curbs of mechanical rooms located above occupied spaces.
- B. Referenced Standards/Minimum Criteria:
  - 1. None.
- C. Submittals Required:
  - 1. Product data.
  - 2. Color samples.
- D. Restrictions/Critical Criteria:
  - 1. Concrete must be cured minimum of 28 days prior to application.
  - 2. Apply two (2) coat system per manufacturer's recommendations.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products:
  - 1. "Vulkem 350/351" by Tremco Sealants: [www.tremcosealants.com](http://www.tremcosealants.com).
  - 2. Approved substitute.



# Cherry Creek School District Technical Guidelines - 2020

## 07 19 00 – WATER REPELLENT ANTI-GRAFFITI COATINGS

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Water repellent anti-graffiti coating on exterior masonry walls.
  - 2. Graffiti control coating on interior masonry walls in building.
  - 3. Materials for graffiti removal.
  
- B. Referenced Standards/Minimum Criteria:
  - 1. None.
  
- C. Submittals Required:
  - 1. Product data.
  - 2. Warranty documents.
  
- D. Restrictions/Critical Criteria:
  - 1. Mock-Up: Apply coatings to masonry sample panel. Obtain Architect's approval before proceeding.
  - 2. Coating systems shall not be applied until masonry has been thoroughly cleaned and is dry and free of efflorescence.
  - 3. Graffiti Control Coating: Masonry shall be clean and dry to the satisfaction of the Architect. Apply graffiti control coating from grade up to full height of walls on entire perimeter of building at coverage rate as recommended by manufacturer.
  - 4. Protect adjacent surfaces from overspray. Mask windows with protective sheeting prior to coating applications.
  - 5. Warranty: Replace materials that fail to provide water repellency for a period of 5-years after substantial completion, including both material and labor to install material.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturer/Products - Water Repellent/Anti-Graffiti Coating:
  - 1. "Protectosil Antigraffiti" by Evonik Industries: [www.evonik.com](http://www.evonik.com).
  - 2. "Sure Klean Weather Seal Blok-Guard and Graffiti Control" by Prosoco: [www.prosoco.com](http://www.prosoco.com).
  - 3. "Graffiti Gard S" by Textured Coatings of America: [www.texcote.com](http://www.texcote.com).
  - 4. Approved substitute.
  
- B. Graffiti Removal Solution (provide 1 gallon)
  - 1. "Graffiti Wipe" by Prosoco: [www.prosoco.com](http://www.prosoco.com).
  - 2. Approved substitute.



# Cherry Creek School District Technical Guidelines - 2020

## 07 21 00 – THERMAL INSULATION

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Rigid insulation.
  - 2. Blanket insulation.
  - 3. Foamed insulation.
  
- B. Referenced Standards/Minimum Criteria:
  - 1. Minimum insulation values for walls and roofs shall be as defined in the International Energy Code.
  - 2. Net minimum insulation design goals (average for entire assemblies):
    - a. Roof system: R20 (equivalent to about 3-inches of rigid insulation or 6-inches of batt insulation).
    - b. Wall system: R19 (equivalent to about 6-inches of batt insulation).
    - c. Slab on grade (perimeter): R12 (equivalent to about 2-inches of rigid insulation).
  - 3. Use full thickness of blanket insulation to fit stud with (i.e., 6-inch batts for 6-inch stud).
  
- C. Submittals Required:
  - 1. Product data.
  
- D. Restrictions/Critical Criteria:
  - 1. All batt/blanket insulation exposed in return air plenums shall be foil faced with flame spread of 25 or less on plenum side of insulation.
  - 2. In order to avoid sagging of insulation in steel studs tape batt flanges to face of steel studs.
  - 3. Install insulation types per manufacturer's recommendations.
  - 4. Foamed in place insulation may be used in lieu of batt insulation in stud space and/or cavity between exterior sheathing and masonry.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products - Rigid Insulation:
  - 1. "Styrofoam Brand XPS Insulation" by DuPont: [www.dupont.com](http://www.dupont.com).
  - 2. "Foamular 250" by Owens-Corning: [www.owenscorning.com](http://www.owenscorning.com).
  - 3. R-Max: [www.rmax.com](http://www.rmax.com).
  - 4. Approved substitute.
  
- B. Acceptable Manufacturers/Products - Blanket Insulation:
  - 1. Owens Corning Fiberglass: [www.owenscorning.com](http://www.owenscorning.com).
  - 2. Johns-Manville: [www.jm.com](http://www.jm.com).
  - 3. Certainteed Corp. [www.certainteed.com](http://www.certainteed.com).
  - 4. Approved substitute.



## Cherry Creek School District Technical Guidelines - 2020

- C. Acceptable Manufacturers/Products - Foamed Insulation:
  - 1. "Walltite" by BASF Spray Polyurethane Foam: [www.spf.basf.com](http://www.spf.basf.com).
  - 2. "Thermco Foam" for block fill: [www.thermcofoam.com](http://www.thermcofoam.com).
  - 3. Approved substitute.

### 07 24 00 – EXTERIOR INSULATION AND FINISH SYSTEMS

#### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. The use of EIFS is not permitted on CCSD projects.

### 07 26 16 – UNDERSLAB VAPOR RETARDERS

#### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Underslab vapor retarders
  - 2. Crawlspace vapor retarders
  - 3. Seam tape
- B. References Standards/Minimum Criteria:
  - 1. Vapor barrier: ASTM E-1745-08
- C. Submittals Required:
  - 1. Product data for vapor barrier.
- D. Restrictions/Critical Criteria:
  - 1. Include underslab vapor barrier and underslab gravel bed when recommended by the Geotechnical Engineer. Design according to Geotechnical Engineer's recommendations.

#### PART 2 - PRODUCTS

- A. Acceptable Products - Underslab Vapor Retarder:
  - 1. "StegoWrap" 15 mil, Stego Industries: [www.stegoindustries.com](http://www.stegoindustries.com).
  - 2. "Perminator" or "Perminator HP" 15 mil, W.R. Meadows: [www.wrmeadows.com](http://www.wrmeadows.com).
  - 3. Approved Substitute.
- B. Acceptable Products - Crawlspace Vapor Retarder:
  - 1. "StegoCrawl" 15 mil, Stego Industries: [www.stegoindustries.com](http://www.stegoindustries.com).
  - 2. Approved Substitute.



# Cherry Creek School District Technical Guidelines - 2020

## 07 53 23 – EPDM MEMBRANE ROOFING -LOOSE-LAID BALLASTED OR FULLY ADHERED

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Loose-laid ballasted EPDM roofing or fully-adhered EPDM membrane roofing.
  - 2. Roof insulation.
  - 3. Base flashings.
  - 4. Bonding adhesives, lap sealants, fasteners, and other accessories.
  - 5. Walkway pavers and pads.
  - 6. Insulation cover board.
  - 7. Gypsum board base as required for fireproofing.
  
- B. References Standards/Minimum Criteria:
  - 1. UL Class A external fire rating, conform to IBC requirements for "high wind," exposure "C".
  - 2. Qualifications: Roofing applicator shall be approved by membrane manufacturer and shall be a firm having successfully installed roofing of type specified for a minimum of five (5) years.
  - 3. Roofing system is to have a 20-year life expectancy.
  - 4. Insulation in roof system per ASTM E119 and ASTM E84.
  - 5. Ballast per ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  
- C. Submittals Required:
  - 1. Shop drawings.
  - 2. Product data.
  - 3. Sample warranty.
  - 4. Samples of membrane.
  
- D. Quality Control Submittals by Contractor:
  - 1. Manufacturer's Field Reports: Submit written report from manufacturer's representative after inspection of roof deck to verify deck is satisfactorily for installation of system. Submit additional report indicating roof has been installed in accordance with manufacturer's requirements.
  - 2. Record of Work: Submit written records indicating temperature and moisture conditions and the type of and location of work being done during each day of roofing operations.
  - 3. Wind Uplift Report: Submit copy of IBC Report for roofing to be installed, indicating roofing system has been tested and approved for wind uplift requirements specified.
  - 4. Certification: Submit written certificate that applicator is approved by roofing manufacturer.
  
- E. Restrictions/Critical Criteria:
  - 1. Design consultant to specify/design roof systems to provide for structural/thermal movement, wind loadings/uplift, and periodic foot traffic without failure. Confirm with Owner type of roof to be used.



## Cherry Creek School District Technical Guidelines - 2020

2. Drainage Issues:
  - a. Slope roof structure (where possible) to achieve 1/4-inch per foot roof slope as required by the IBC. Where sloping of structures is not possible and where crickets are required use tapered insulation.
  - b. Install crickets or saddles to allow immediate drainage away membrane flashing and to direct water to roof drains/leader heads.
  - c. The use of roof drains with interior storm piping is preferred over exterior drainage/downspouts.
  - d. Maintain a minimum of 18-inch separation between penetrations, roof drains, curbs, and changes of levels.
  - e. Termination of base flashings to be 8-inch minimum above the highest point of roof membrane.
  - f. Curbs supporting rooftop equipment shall be a minimum of 12-inches in height.
  - g. Provide overflow drains/scuppers as required by IBC.
3. Design access to each major roof level from walkout doors or roof hatches. Access to minor roof areas may be by means of steel ladders when the height difference is greater than 3-feet.
4. The roof system manufacturer's regional representative shall be required to inspect the work a minimum of once per week during installation of the roof and submit inspection report to Contractor, who will submit copies to the Architect.
5. An inspector of the roof system manufacturer shall make an inspection upon completion to ascertain that the entire system has been installed according to manufacturer's published specifications and details.
6. Install roofing system and accessories per manufacturer's recommendations.
7. Where required for fire rating of roof assembly install gypsum sheathing on top of metal deck and under rigid insulation. Fasten per roofing system manufacturer's recommendations.
8. Warranties:
  - a. Provide manufacturer's non-pro-rated, initial dollar limit warranty against defects in materials and workmanship in roof system including membrane, insulation, fasteners, and base flashings for a period of ten (10) years from completion of roof.
  - b. Provide roofing installer's two (2) year warranty against defects in material and workmanship of roofing system.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products – Loose-laid, Mechanically Fastened Ballasted EPDM Roof System:
  1. Ballasted System, Design B; 60 mil with 60 mil flashings, color black by Carlisle SynTec: [www.carlisesyntec.com](http://www.carlisesyntec.com), or comparable system by one of the following:
    - a. Firestone: [www.firestonebpc.com](http://www.firestonebpc.com).
    - b. Verisco, Inc. [www.versico.com](http://www.versico.com).
    - c. Genflex: [www.genflex.com](http://www.genflex.com).
    - d. Johns Manville: [www.jm.com](http://www.jm.com).
    - e. Approved substitute.





## Cherry Creek School District Technical Guidelines - 2020

- B. Acceptable Manufacturers/Products – Fully Adhered EPDM Roof System:
1. Fully adhered EPDM Roofing System; 60 mil with 60 mil flashings, color black by Carlisle SynTec: [www.carlislesyntec.com](http://www.carlislesyntec.com), or comparable system by one of the following.
    - a. "Rubbergard" by Firestone: [www.firestonebpc.com](http://www.firestonebpc.com).
    - b. Approved substitute.
- C. As an alternate or option to using the adhered EPDM system the School District may consider using a 60 mil TPO adhered system such a "Sure-Weld TPO System" by Carlisle SynTec: [www.carlislesyntec.com](http://www.carlislesyntec.com). White color.
- D. Acceptable Roof Insulation:
1. On Metal Deck: Two (2) layers of FS HH-1 1972/2 Class 1, polyisocyanurate rigid insulation with glass reinforced scrim racers. Total thickness, as required for R=20. Provide insulation of manufacturer and type approved by roofing membrane manufacturer.
  2. Tapered Insulation: FS HH-1-1972/2, Class 1, factory tapered polyisocyanurate rigid insulation, 1.5 pct minimum density. Tapered insulation system shall develop consistent surface slope of 1/4-inch per foot.
    - a. Tapered Insulation Adhesive: Approved by insulation manufacturer.
  3. Insulation Fasteners for Adhered Roofing System: Carlisle "SureSeal HP Fasteners" or approved substitute, subject to acceptance by roofing manufacturer. Provide fasteners fully coated with manufacturer's standard fluoropolymer paint, of length required to penetrate deck 1/2-inch minimum. Pull-out resistance, 360 lbs. Minimum.
  4. Cover Board for Adhered Roofing System: Provide cover board as required by roofing manufacturer for use with fully adhered single ply membrane system and acceptable for required fire rating.
  5. Substrate Board: Gypsum based, provide as required to comply with required fireproofing assembly.
- E. Acceptable Ballast for Ballasted EPDM Roof:
1. Field of roof: Nominal 1" to 2" rounded water worn gravel at 12 lbs per square foot.
  2. Roof corners: Nominal 2" to 3" rounded water worn gravel at 18 lbs. per square foot.
  3. Roof perimeter: Nominal 2" to 3" rounded water worn gravel at 15 lbs. per square foot.
- F. Acceptable Walkway Pavers:
1. The Roofblok System: [www.roofblok.com](http://www.roofblok.com).
  2. Westile: [www.westile.com](http://www.westile.com).
  3. Approved substitute.
  4. Size: 12- x 16-inches, 12- x 12-inches, or 24- x 24-inches. Weight: 12 lbs. per square foot
  5. Installation: On paver protection pads as recommended by roof membrane manufacturer.



# Cherry Creek School District Technical Guidelines - 2020

## 07 61 00 - SHEET METAL ROOFING AND SIDING

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Standing seam roofing and standing seam or flat seam siding.
  - 2. Rake and eave fascia.
  - 3. Wall corners and specialty terminations.
  - 4. Ice and water dam shield.
  - 5. Other related flashing, closures, and terminations.
  
- B. Referenced Standards/Minimum Criteria:
  - 1. Installer Qualifications: Installation only by Contractor/Erector approved and authorized by manufacturer with a minimum of 5 years of experience with similar installations.
  - 2. Design Criteria:
    - a. Wind Speed and Exposure Classification: Metal roofing system shall be designed to withstand ground wind in accordance with the IBC.
    - b. Fastening Details and Spacings: Designed by system manufacturer to meet specified wind speed criteria and snow sliding/accumulation structural requirements. Roof fasteners shall be designed to pass through insulation/sheathing substrate and be anchored through the structural metal roof deck into framing members where possible, and into the structural metal roof deck only where framing members are available.
    - c. Attachment system shall be designed to provide movement capability to accommodate sheet metal roofing system thermal expansion and resist air infiltration.
  
- C. Submittals Required:
  - 1. Shop drawings: Prepared by manufacturer or authorized representative of manufacturer.
  - 2. Manufacturer's product data.
  - 3. Design calculations: Compliance with wind speed criteria including test results of anchorage methods, roof pressure zones, and thermal movement calculations, all signed by registered Engineer.
  - 4. Color options: Actual samples of prefinished metal.
  - 5. Sample of manufacturer's twenty (20) year warranty that prefinished metal will not fade, chalk or crack and that the system will be watertight for the same 20 year period.
  
- D. Restrictions/Critical Criteria:
  - 1. Sheet metal work shall be warranted, in writing, against defect in material and workmanship for a period of two (2) years from date of substantial completion.
  - 2. Watertight System: Metal roofing and siding shall provide non-pro-rated, initial dollar limit, twenty (20) year system watertightness warranty to cover the entire installation. The system manufacturer shall verify and approve all system components and details, review shop drawing submittals, and inspect installation prior to and following system installation. Warranty shall include all roofing penetrations, valley and eave conditions,



## Cherry Creek School District Technical Guidelines - 2020

and roof mounted equipment installation. Roofing system manufacturer shall be responsible for all repairs due to defects in materials and/or workmanship in entire system as required to maintain roof and flashings in watertight condition following completion of installing roofing contractor's two (2) year warranty period through the remaining balance of the twenty (20) year period following the roofing completion date.

3. Install full width of ice and water shield at eaves and valleys of sheet metal roofing.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products - Prefinished Metal Roofing and Siding:
  1. Standing Seam or Flush Seam Panel Systems (24 gauge conforming to ASTM A792 and ASTM A250), flashings and fasteners. Prefinished metal to have Kynar Resin Fluoropolymer finish. Products as manufactured by one of the following:
    - a. AEP-Span: [www.aepspan.com](http://www.aepspan.com)
    - b. Berridge Manufacturing Co.: [www.berridge.com](http://www.berridge.com).
    - c. Englert: [www.englertinc.com](http://www.englertinc.com).
    - d. Ultra Seam, Inc. [www.ultraseam.com](http://www.ultraseam.com).
    - e. Approved substitute.
- B. Acceptable Manufactures/Products - Accessories:
  1. Ice and Water Damming Shield: Self-adhering rubberized asphalt waterproofing membrane, 36-inch wide rolls, 40 mils thick, Class A rated, as manufactured by one of the following:
    - a. GCP Applied Technologies: [www.gcpat.com](http://www.gcpat.com).
    - b. Protecto Wrap: [www.protectowrap.com](http://www.protectowrap.com).
    - c. Owens-Corning: [www.owenscorning.com](http://www.owenscorning.com).
  2. Joint Sealant: Approved type of polyurethane sealant, in accordance with requirements of roofing/siding manufacturer. Roofer's mastic is not allowed.
  3. Snow Guards: As recommended by manufacturer of roofing system.

### 07 60 00 – SHEET METAL FLASHING AND TRIM

#### PART 1 - GENERAL

- A. Summary - Section includes:
  1. Wall caps and gravel stops.
  2. Flashing, counter flashing, reglet flashing.
  3. Overflow scuppers.
  4. Roof expansion joint covers.
  5. Scuppers, conductor heads, downspouts, and splash pans.
  6. Mechanical rooftop unit curb flashing.
  7. Other sheet metal flashing related to the above.



## Cherry Creek School District Technical Guidelines - 2020

- B. Referenced Standards/Critical Criteria:
1. Comply with standards/recommendations of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual, current edition.
  2. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting design pressures applicable per site location.
  3. Prefinished Sheet Metal: Conform to ASTM A792 - Standard Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- C. Submittals Required:
1. Shop drawings.
  2. Product data.
  3. Color options.
  4. Warranty documents.
- D. Restrictions/Critical Criteria:
1. Contractor Qualifications: Sheet metal shall be installed only by a firm specializing in sheet metal work and which has been in the sheet metal business continuously for the past five (5) years.
  2. Sheet Metal: Sheet metal work shall be warranted, in writing, against defects in materials and workmanship for a period of two (2) years from the roof completion date.
  3. Contractor to construct all joints watertight and with provisions to allow for expansion using details and recommendations of manufacturers and SMACNA.
  4. Coat dissimilar materials in contact with each other with asphaltic compound.
  5. Counter Flashing: Furnish and install receiver and insert flashing. Construct two-piece system of galvanized iron or prefinished metal designed and installed to spring tight against base flashing.
  6. Manufacturer's twenty (20) year warranty that prefinished metal will not fade, chalk, or crack.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products - Prefinished Metal Exposed to View:
1. 24-gauge Galvalume with Kynar Fluoropolymer Finish:
    - a. Berridge: [www.berridge.com](http://www.berridge.com).
    - b. AEP-Span: [www.aepspan.com](http://www.aepspan.com).
    - c. Centria Architectural Systems: [www.centria.com](http://www.centria.com).
    - d. Approved substitute.
- B. Acceptable Manufacturers/Products - Galvanized Iron at locations concealed from view:
1. 20 gauge, hot-dipped, conforming to ASTM A36.
    - a. Berridge: [www.berridge.com](http://www.berridge.com).
    - b. AEP-Span: [www.aepspan.com](http://www.aepspan.com).
    - c. Centria Architectural Systems: [www.centria.com](http://www.centria.com).
    - d. Approved substitute.



# Cherry Creek School District Technical Guidelines - 2020

- C. Acceptable Manufacturer/Products - Flexible EPDM Bellows Expansion Joint Cover with two metal flanges. Provide prefabricated intersections and corners:
  - 1. "Expand-O-Flash" by Johns Manville: [www.jm.com](http://www.jm.com).
  - 2. "Roof Expansion Joint" by Lexcor: [www.lexcor.net](http://www.lexcor.net).
  - 3. "Metalastic CMF Style" by GAF Materials: [www.gaf.com](http://www.gaf.com).
  - 4. Approved substitute

## 07 72 00 – ROOF ACCESSORIES

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Smoke vents for auditorium stages.
  - 2. Roof access hatches.
- B. Referenced Standards/Minimum Criteria:
  - 1. None.
- C. Submittals Required:
  - 1. Product data.
  - 2. Shop drawings.
- D. Restrictions/Critical Criteria:
  - 1. Install products according to manufacturer's recommendations.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturer/Products - Smoke Vents:
  - 1. Type: Double-leaf Automatic Smoke Vent, size as required by Code, by one of the following:
    - a. Bilco: [www.bilco.com](http://www.bilco.com).
    - b. Babcock Davis: [www.babcockdavis.com](http://www.babcockdavis.com).
    - c. Milcor, Inc. [www.milcorinc.com](http://www.milcorinc.com).
    - d. Approved substitute.
- B. Acceptable Manufacturers/Products - Roof Access Hatches:
  - 1. Type: Roof Hatch for vertical ladder access, minimum size 36-inches by 36-inches, by one of the following:
    - a. Bilco: [www.bilco.com](http://www.bilco.com).
    - b. Babcock Davis: [www.babcockdavis.com](http://www.babcockdavis.com).
    - c. Milcor, Inc. [www.milcorinc.com](http://www.milcorinc.com).
    - d. J.L. Industries: [www.activarcpg.com/jl-industries](http://www.activarcpg.com/jl-industries).
    - e. Nystrom: [www.nystrom.com](http://www.nystrom.com).
    - f. Dur-Red Products: [www.dur-red.com](http://www.dur-red.com).
    - g. Approved substitute.



# Cherry Creek School District Technical Guidelines - 2020

- C. Accessories:
  - 1. Provide "Ladder-up Safety Post" by Bilco or equivalent by other manufacturer.
  - 2. Approved substitute.

## 07 81 00 – CEMENTITIOUS FIREPROOFING

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Sprayed-on fireproofing on structural steel members.
- B. Referenced Standards/Minimum Criteria:
  - 1. Regulatory Requirements: The sprayed-on fireproofing shall be tested by Underwriters Laboratories, Inc., (UL) or other certified testing agency to achieve fire resistive ratings required in accordance with ASTM E119 and ASTM E84 (smoke = 0, flame = 0, fuel = 0).
  - 2. Fireproofing shall not contain asbestos fiber. Comply with requirements of the IBC, latest edition.
  - 3. Minimum bond strength of fireproofing per ASTM E736 - Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members: 200 psf.
  - 4. Compressive strength of fire proofing per ASTM E761 - Standard Test Method for Compressive Strength of Sprayed Fire-Resistive Material Applied to Structural Members: 5.21 PCF.
- C. Submittals Required:
  - 1. Products data.
  - 2. Certification: Submit certification that material is asbestos free and complies with local regulations for controlling VOC's.
- D. Restrictions/Critical Criteria:
  - 1. General: Apply sprayed fireproofing with experienced craftsmen in accordance with the manufacturer's recommendations in thickness required for fire rating.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products:
  - 1. "CAFCO 400" by Isolatek International Corp. [www.isolatek.com](http://www.isolatek.com).
  - 2. "Monokote Mk-6 HY" by GCP Applied Technologies: [www.gcpat.com](http://www.gcpat.com)
  - 3. Approved substitute



# Cherry Creek School District Technical Guidelines - 2020

## 07 84 00 – FIRESTOPPING

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Fire stop and smoke/draft barrier systems for penetrations through fire rated walls, ceilings, and floors.
  - 2. Construction gap barrier at top of walls, perimeter of fire rated hollow metal door frames, perimeter of fire rated floors, and similar.
- B. Referenced Standards/Minimum Criteria:
  - 1. Products required under this Section shall comply with ASTM E119, ASTM E814 and the International Building Code, latest edition.
- C. Submittals Required:
  - 1. Product data.
  - 2. Qualifications: Submit documentation from manufacturer verifying that installer is approved for installation of products and systems to be used.
  - 3. Certificate that materials are VOC compliant.
  - 4. Provide firestop penetration schedule showing typical penetrations of each material type for each construction assembly and the related fire resistive rating requirements for each type of construction assembly.
- D. Restrictions/Critical Criteria:
  - 1. Install fire stop systems using methods and equipment in accordance with manufacturer's written instructions and the fire resistance listing.
  - 2. Fire stopping compounds shall be paintable or capable of receiving finish materials in areas which are exposed to view and scheduled to receive finishes.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers/Products/Systems:
  - 1. USG: [www.usg.com](http://www.usg.com).
  - 2. Rectorseal: [www.rectorseal.com](http://www.rectorseal.com).
  - 3. Tremco: [www.tremcosealants.com](http://www.tremcosealants.com).
  - 4. Specified Technologies, Inc. [www.stifirestop.com](http://www.stifirestop.com).
  - 5. 3M Fire Protection Products: [www.3m.com](http://www.3m.com).
  - 6. Dow Inc. [www.dow.com](http://www.dow.com).
  - 7. Carboline Co. [www.carboline.com](http://www.carboline.com).
  - 8. Hilti: [www.hilti.com](http://www.hilti.com).
  - 9. Approved substitute.



# Cherry Creek School District Technical Guidelines - 2020

## 07 91 10 – COMPRESSION SEALS

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Rubber compression seals at expansion joints.
- B. Referenced Standards/Minimum Criteria:
  - 1. None.
- C. Submittals Required:
  - 1. Product data.
  - 2. Color options/samples.
- D. Restrictions/Critical Criteria:
  - 1. Install according to manufacturer's recommendations.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers - Expansion Compression Seals:
  - 1. Watson Bowman Acme: [www.wabacorp.com](http://www.wabacorp.com).
  - 2. C-S Group: [www.c-sgroup.com](http://www.c-sgroup.com).
  - 3. MM Systems Corporation: [www.mmsystemscorp.com](http://www.mmsystemscorp.com).
  - 4. Approved substitute.
- B. Manufacturer and Type: Watson Bowman "WABO Weatherseal II" or equal product of other acceptable manufacturer. Preformed thermoplastic rubber compound. Provide manufacturer's recommended lubricant adhesive. No field splices are allowed within exposed vertical joints. Provide size as required for joint width indicated.
- C. Fire Rated Compression Seals: Provide UL listed or Warnock-Hersey labeled compression seal assemblies at fire-rated joints indicated on drawings. Provide manufacturer's fire resistive barrier behind compression seals as required to achieve required fire-rating.





# Cherry Creek School District Technical Guidelines - 2020

## 07 92 00 - JOINT SEALERS

### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Caulking and sealant to seal against infiltration from air and water, and to provide a visual finish to seal cracks between dissimilar materials.
  - 2. Sealant backing materials.
  - 3. Bond breaker tape.
  
- B. References Standards/Minimum Criteria:
  - 1. Joint sealant assemblies in fire-resistive construction shall be listed or classified for fire (F) and temperature (T) rating required by independent testing agency such as Underwriters Laboratories, Inc. (UL) or other agency acceptable to local building authority.
  - 2. Applicator Qualifications: Joint sealers shall be applied by a qualified sealant contractor in business for at least five (5) years prior to this installation, employing skilled tradesmen for the work.
  
- C. Submittals Required:
  - 1. Product data.
  - 2. Color options.
  - 3. Furnish a two (2) year warranty in writing to replace joint sealant which fails during the warranty period to perform as air-tight and watertight joints; or which fail in joint adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, or general durability.
  
- D. Restrictions/Critical Criteria:
  - 1. Install caulking and sealants per manufacturer's recommendations.

### PART 2 - PRODUCTS

- A. Acceptable Non-rated Joint Backing Material:
  - 1. Non-Fire-Rated: Size joint backing material for minimum 30% compression when inserted in the joint. Material shall be round rod or semi-circular type.
  - 2. Acceptable Manufacturers and Type:
    - a. "Ethafoam" by Richelieu: [www.richelieu.com](http://www.richelieu.com).
    - b. "SOF Rod", "HBR", "HBR XL", or "OCFoam" by Nomaco: [www.nomaco.com](http://www.nomaco.com).
    - c. "Denver Foam" by Backer Rod Mfg, Inc. [www.backerrod.com](http://www.backerrod.com).
    - d. Approved substitute.
  
- B. Acceptable Fire-rated Baking Material:
  - 1. Joint backing material required by sealant manufacturer for UL listed joint assembly achieving required fire-resistive rating.
  - 2. Acceptable manufacturers and type:
    - a. "Ultra-Block" by Backer Rod Mfg, Inc. [www.backerrod.com](http://www.backerrod.com).
    - b. Approved substitute



## Cherry Creek School District Technical Guidelines - 2020

- C. Acceptable Manufacturers - Joint Sealants:
  - 1. Acceptable Manufacturers:
    - a. DAP Inc. [www.dap.com](http://www.dap.com).
    - b. GCP Applied Technologies: [www.gcpat.com](http://www.gcpat.com).
    - c. Pecora Corporation: [www.pecora.com](http://www.pecora.com).
    - d. Tremco Manufacturing Company: [www.tremcosealants.com](http://www.tremcosealants.com).
    - e. Sika Corporation: [www.usa.sika.com](http://www.usa.sika.com).
    - f. Bostik: [www.bostik.com](http://www.bostik.com).
    - g. Approved substitute
  - 2. Acceptable Materials:
    - a. Primer: As recommended by the sealant manufacturer.
    - b. Interior Sealants: Latex acrylic.
    - c. Under Thresholds: Silicone.
    - d. Plumbing Fixtures and Wet Areas: Kitchen and Bath specific silicone.
    - e. Interior Fire-Rated Joint Sealant: One or two-component acrylic, silicone, or polyurethane having UL listing. Joint sealants for walls and ceilings shall be paintable.
    - f. Control Joints and Expansion Joints in Interior Floor Slabs, Exterior Sidewalks, and Slabs on Grade: Two-component pourable self-leveling polyurethane.
    - g. All Remaining Joint Sealants: Two-component polyurethane, Type 11, Class A, nonsag.
- D. Acceptable Bond Breaker Tape:
  - 1. Polyethylene tape or other plastic tape as recommended by the sealant manufacturer to be applied to sealant-contact surfaces where bond to the substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape wherever applicable.

### 07 95 00 – EXPANSION CONTROL

#### PART 1 - GENERAL

- A. Summary - Section includes:
  - 1. Ceiling expansion joint covers.
  - 2. Floor expansion joint covers.
  - 3. Wall/floor expansion joint covers.
- B. Referenced Standards/Minimum Criteria:
  - 1. Provide UL listed Warnock - Hersey labeled expansion joint cover assemblies at fire rated wall locations. Provide manufacturers fire resistive barrier behind joint covers as required to achieve fire-rating.
- C. Submittals Required:
  - 1. Product data, including colors of elastomeric seal.



## Cherry Creek School District Technical Guidelines - 2020

- D. Restrictions/Critical Criteria:
1. Install surface mounted expansion joint covers flush with adjacent finish in accordance with manufacturer's installation instructions. Corners shall be mitered.

### PART 2 - PRODUCTS

- A. Acceptable Manufacturers:
1. MM Systems Corporation: [www.mmsystemscorp.com](http://www.mmsystemscorp.com).
  2. Watson Bowman Acme: [www.wabacorp.com](http://www.wabacorp.com).
  3. Balco: [www.balcousa.com](http://www.balcousa.com).
  4. Architectural Art Manufacturing, Inc. [www.archart.com](http://www.archart.com).
  5. C-S Group: [www.c-sgroup.com](http://www.c-sgroup.com).
  6. Approved substitute
- B. Acceptable Products (Architect to verify these products are appropriate for specific design/location. Provide width appropriate for joint design):
1. Ceiling Expansion Joint Covers: Low profile expansion joint system consisting of extruded 6063-T5 aluminum rails and flexible extruded polyvinyl chloride seals, designed to accommodate new or existing construction, which incorporates a colorable elastomeric seal that demonstrates ability to remain flat during normal movement cycles. Provide a complete system. Watson Bowman Acme "Model CEB" or equal product from other acceptable manufacturer.
  2. Floor to Floor Expansion Joint Covers: Mill-finish aluminum floor cover, recessed 1/8-inch for finish flooring materials. Provide manufacturer's recommended lubricant, adhesive, and expansion anchors. Watson Bowman Acme "Model FJG", "Model FJX" or equal product from other acceptable manufacturer.
  3. Interior Wall Joints at Masonry Walls: 6063-T5 aluminum with extruded elastomeric seal capable of accommodating multi-directional seismic movement. Watson Bowman Acme "Model WSW" or equal product of other acceptable manufacturer.
  4. Interior Wall Joints at Metal Stud Walls: Low profile expansion joint system consisting of extruded 6063-T5 aluminum rails and flexible extruded polyvinyl chloride seals, designed to accommodate new or existing construction, which incorporates a colorable elastomeric seal that demonstrates ability to remain flat during normal movement cycles. Provide a complete system. Watson Bowman Acme "Model #CWCA" or equal of other acceptable manufacturer.
  5. Concealed Carpet Floor to Floor Expansion Joint Covers: Extruded alloy 6063-T5 aluminum edge frame, clean anodized finish. Provide manufacturer's recommended expansion anchors. MM Systems "Model HSL" or equal product from other acceptable manufacturers.

**END OF SECTION**