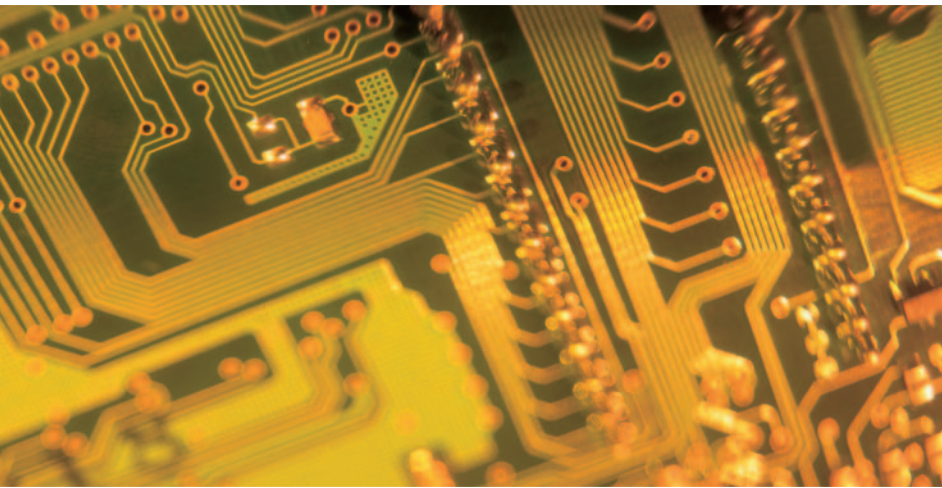
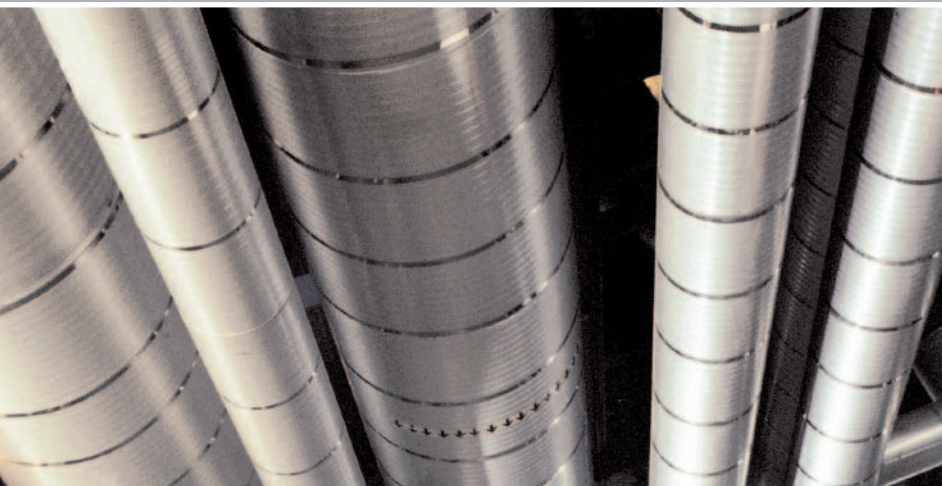




Fire Protection



Electrical Equipment



Building Materials

Approval Guide

September 2004

**A Guide to Equipment, Materials and Services
FM Approved for Property Conservation**

- Approval Standards Information
- Interlaboratory Agreements
- International Buyers' Directory
- FM Global's *2004 Resource Catalog*



An **FM** Global Enterprise

Bluestone Inc, P.O. Box 304, New Boston NH 03070

Roof Covers:	Bluestone COPA 4
Decks:	Cementitious Wood Fiber, Concrete, Gypsum Reroof, Recover, Steel.
Coatings:	Karnac 97 at 1.5 gal/sq (0.6 Urr ²) (optional—see ASTM E 108 classifications)
Laps:	3 in. (76 mm) wide side and 6 in. (150 mm) wide end laps.
Application:	Torch applied.
Ply Sheets:	BRAI Supreme Ply-IV, BRAI Supreme Ply-VI adhered with hot asphalt at 25 lb/sq (1.2 kg/m ²)
Base Sheets:	Ultra Base, Flex Base 30, Permavent, Flex Base 60, Flex Base 6OHS, Intec Modified Base Plus, Intec Modified Base Plus HS mechanically fastened or adhered with hot asphalt at 25 lb/sq (1.2 kg/m ²).
Hail Rating:	Class 1-SH
ASTM E 108:	Class A over noncombustible decks at ½ in 12 with coating. Class C over noncombustible decks at ½ in 12 without coating.

Construction #1: Recover. Optional Bluestone COPA 4 torch applied to properly prepared existing smooth Class 1 asphaltic built-up roof assembly. Bluestone COPA 4 torch applied to Bluestone COPA 4 or existing roof assembly. Meets Class 1-60/1-90 per existing roof cover securement.

Construction #2: Concrete, Recover, Steel. Mm ¾ in. (19 mm) [max 1 in. (25 mm) for recover over steel] thick ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite, Fesco Board, mm 1~6 in. (24 mm) [max 1 in. (25 mm) for recover over steel] thick Standard or Wide Flute Armor-R Glass Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation, mm 1~ in. (33 mm) [max 1 in. (25 mm) for recover over steel] thick USIso, ACFoam-II or Multi-Max, mm 1.5 in. (40 mm) [max 1 in. (25 mm) for recover over steel] thick ENRGY 3 or mm 1.5 in. (40 mm) [max 1 in. (25 mm) for recover over steel] thick USIso/Perlite Composite, ENRGY 3 Plus, Plus, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Composite F.M. insulation loose laid over deck or existing Class I built-up roof assembly if present. Ultra Base or Flex Base 30 fastened through insulation and existing Class 1 built-up roof assembly if present to deck with Drill-Tec Metal Plates and fasteners Approved for use with the plates and deck 12 in. (394 mm) o.c. along the mm 2 in. (50 mm) wide base sheet side laps and 18 in. (457 mm) o.c. staggered in two rows equally spaced between base sheet side laps. Bluestone COPA 4 torch applied to base sheet. Meets Class 1-90.

Construction #2a: Concrete, Steel. Dens Deck Insulation System (Georgia Pacific) or Styrofoam insulation system (Dow Chemical) installed per insulation system listing. Base sheet installed as above. Roof cover installed as above. Meets Class 1-60/1-90 per roof cover attachment.

Construction #3: Steel. Mm ¾ in. (19 mm) thick ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board, mm 1.5 in. (40 mm) thick USIso, USIso/Perlite Composite, ACFoam-II, ENRGY 3 Plus, Fly-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation, Multi-Max, Composite F.M., Standard or Wide Flute Armor-R Glass, Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation, Dens Deck Insulation System (see G-P Gypsum Corp.), Styrofoam system (see Dow Chemical listing) fastened to deck with one Drill-Tec Metal Plate and fastener Approved for use with the plate and deck per 2.67 ft² (0.25 m²) max contributory area per fastener. Optional second layer of one of the above insulations or mm ½ in. (13 mm) thick Universal Substrate, mm ¾ in. (19 mm) thick ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board, adhered to bottom layer with hot asphalt at 25 lb/sq (1.2 kg/m²). The optional second layer of insulation (except Universal Substrate) may be fastened along with the first layer. Base sheet, ply sheet(s) and roof cover installed as follows:

Construction #3a: 2 or 3 plies BRAI Supreme Ply-IV or BRAI Supreme Ply-VI adhered to insulation with hot asphalt. Bluestone COPA 4 torch applied to top ply sheet. Meets Class 1-90.

Construction #3b: Flex Base 30 or Ultra Base adhered to insulation with hot asphalt. Optional Bluestone COPA 4 torch applied to base sheet. Bluestone COPA 4 torch applied to base sheet or Bluestone COPA 4. Meets Class 1-90.

Construction #4: Steel. Insulation listed in Construction #3 above loose laid over deck. Optional second layer of one of the above insulations or mm ½ in. (13 mm) thick Universal Substrate or mm ¾ in. (19 mm) ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board loose laid over bottom layer. Flex Base 60, Flex Base 6OHS, Flex Base 30 or Ultra Base fastened through insulation to deck with Drill-Tec Metal Plates and fasteners Approved for use with the plates and deck 12 in. (305 mm) o.c. at mm 2 in. (50 mm) base sheet side laps and staggered 18 in. (460 mm) o.c. in two equally spaced rows between base sheet side laps. Ply sheet(s) and roof cover installed as follows:

Construction #4a: Optional 1 or 2 plies BRAI Supreme Ply-IV or BRAI Supreme Ply-VI adhered to Flex Base 60, Flex Base 6OHS, Flex Base 30 or Ultra Base with hot asphalt. Bluestone COPA 4 torch applied to base sheet or top ply sheet. Meets Class 1-90.

Construction #4b: Optional Bluestone COPA 4 torch applied to Ultra Base or Flex Base 30. Bluestone COPA 4 torch applied to base sheet or Bluestone COPA 4. Meets Class 1-90.

Construction #5: Recover. Optional ½ in. (13 mm) thick Universal Substrate or ¾ to 1 in. (19 to 25 mm) Standard or Wide Flute Armor-R Glass, Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation, ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board adhered to properly prepared existing smooth Class 1 asphaltic roof assembly with hot asphalt at 25 lb/sq (1.2 kg/m²). Base sheet, ply sheet(s) and roof cover installed as follows:

Construction #5a: Base sheet adhered to insulation or existing roof cover with hot asphalt. Optional 1.2 or 3 plies BRAI Supreme Ply-IV or BRAI Supreme Ply-VI adhered to base sheet with hot asphalt. Bluestone COPA 4 torch applied to base sheet or top ply sheet. Meets Class 1-60/1-90 per existing roof cover securement.

Construction #5b: 2 or 3 plies BRAI Supreme Ply-IV or BRAI Supreme Ply-VI adhered to insulation or existing roof cover with hot asphalt. Bluestone COPA 4 torch applied to top ply sheet. Meets Class 1-60/1-90 per existing roof cover securement.

Construction #5c: Intec Modified Base Plus, Intec Modified Base Plus HS, Flex Base 60, Flex Base 6OHS, Flex Base 30 or Ultra Base adhered to insulation or existing roof cover with hot asphalt. Optional Bluestone COPA 4 torch applied to base sheet. Bluestone COPA 4 torch applied to base sheet or Bluestone COPA 4. Meets Class 1-60/1-90 per existing roof cover securement.

Construction #6: Recover. Insulation listed in Construction #5 above (except Universal Substrate) secured to deck through properly prepared existing Class 1 roof assembly with one Drill-Tec Metal Plate and fastener Approved for use with the plate and deck per 2.67 ft² (0.25 m²) max contributory area per fastener. Base sheet, ply sheet(s) and roof cover installed per Construction #5a, #5b or #5c above. Meets Class I-90.

Construction #7: Concrete (new and recover). Optional insulation listed in Construction #3 above adhered to primed structural concrete deck or properly prepared existing smooth Class 1 asphaltic roof assembly with hot asphalt at 25 lb/sq (1.2 kg/m²). Optional second layer of insulation or ½ in. (13 mm) thick Universal Substrate or mm ¾ in. (19 mm) ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board adhered to bottom layer with hot asphalt at 25 lb/sq (1.2 kg/m²). Base sheet, ply sheet(s) and roof cover installed per Construction #5a, #5b or #5c above. Meets Class 1-60/1-90 per existing roof cover securement or asphalt securement of insulation, whichever is more critical.

Construction #8: Concrete (new and recover). Optional insulation listed in Construction #3 above secured through properly prepared existing roof assembly if present to deck with one Drill-Tec Metal Plate and fastener Approved for use with the plate and deck per 2.67 ft² (0.25 m²) max contributory area per fastener. Optional second layer of insulation or ½ in. (13 mm) thick Universal Substrate or mm ¾ in. (19 mm) ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board adhered to the bottom layer with hot asphalt at 25 lb/sq (1.2 kg/m²). The optional second layer of insulation (except Universal Substrate) may be fastened along with the first layer. Base sheet, ply sheet(s) and roof cover installed per Construction #5a, #5b or #5c above. Meets Class 1-90.

Construction #9: Recover. Optional insulation listed in Construction #5 above loose laid over properly prepared existing Class 1 roof assembly. Base sheet fastened through insulation if present and existing roof assembly to deck with Drill-Tec Metal Plates and fasteners Approved for use with the plates and deck 12 in. (305 mm) o.c. at mm 2 in. (50 mm) wide base sheet side laps and staggered 18 in. (460 mm) o.c. in two equally spaced rows between base sheet side laps. Ply sheet(s) and roof cover installed as follows:

Construction #9a: Optional 1, 2 or 3 plies BRAI Supreme Ply-IV or BRAI Supreme Ply-VI adhered to base sheet with hot asphalt. Bluestone COPA 4 torch applied to the base sheet or top ply sheet. Meets Class 1-90.

Construction #9b: Optional Bluestone COPA 4 torch applied to base sheet. Bluestone COPA 4 torch applied to the base sheet or Bluestone COPA 4. Meets Class 1-90.

Construction #10: Concrete (new and recover). Insulation listed in Construction #3 above (optional for recover) loose laid over structural concrete deck or properly prepared existing built-up roof assembly. Optional second layer of insulation or ½ in. (13 mm) thick Universal Substrate or mm ¾ in. (19 mm) ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board loose laid over bottom layer. Base sheet secured through insulation and/or existing roof cover if present to deck with one Drill-Tec Metal Plate and fastener Approved for use with the plate and deck 12 in. (305 mm) o.c. along mm 2 in. (50 mm) wide base sheet side laps and staggered 18 in. (455 mm) o.c. in two equally spaced rows between base sheet side laps. Ply sheet(s) and roof cover installed per Construction #9a or #9b above. Meets Class 1-90.

Construction #11: Concrete. Bluestone COPA 4 torch applied to primed deck. Second ply Bluestone COPA 4 torch applied to first. Meets Class 1-90.

Construction #12: Cementitious Wood Fiber, Gypsum reroof. Ultra Base or Flex Base 30 fastened to Approved cementitious wood fiber or existing Approved poured gypsum deck with Powerlite 3 in. Insulation Plates and Powerlite fasteners 9 in. (230 mm) o.c. along mm 3 in. (76 mm) wide base sheet side laps and 18 in. (455 mm) o.c. staggered in two rows equally spaced between base sheet side laps. 1, 2 or 3 plies BRAI Supreme Ply-IV or BRAI Supreme Ply-VI adhered to base sheet with hot asphalt. Bluestone COPA 4 torch applied to top ply sheet. Meets Class 1-90.

Construction #13: Cementitious Wood Fiber, Gypsum reroof. Mm ¾ in. (19 mm) thick ConPerl, GAFTEMP Permalite, GAFTEMP Perlite, Permalite or Fesco Board, mm 1~6 in. (24 mm) thick Standard or Wide Flute Armor-R Glass, Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation, mm 1.3 in. (33 mm) thick USiso or ACFoam-II mm 1.4 in. (36 mm) thick ENRGY 3 or mm 1.4 in. (40 mm) thick USiso/Perlite Composite, ENRGY 3 Plus or Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation secured to Approved cementitious wood fiber or existing Approved poured gypsum deck with one Powerlite 3 in. Insulation Plate and Powerlite fastener per 2 ft² (0.19 m²) max contributory area per fastener at mm 2 in. (50 mm) fastener imbedment. Base sheet, ply sheet(s) and roof cover installed per Construction #2, #3a, #3b, #5a, #5b, #5c, or #11 above. Meets Class 1-90.

Construction #14: Gypsum Re-roof. Ultra Base or Permavent fastened to existing Approved poured gypsum deck per ES Products Inc. listing. 1, 2 or 3 plies BRAI Supreme Ply-IV or BRAI Supreme Ply-VI adhered to base sheet with hot asphalt. Bluestone COPA 4 torch applied to top ply sheet. Meets Class 1-60/1-90 per base sheet securement.