

<b>DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT FEDERAL HOUSING ADMINISTRATION</b>	<b>Series and Series No.</b>
	<b>USE OF MATERIALS BULLETIN NO. 62 a</b>
<b>TO: AREA OFFICE DIRECTORS INSURING OFFICE DIRECTORS</b>	<b>Date</b>
	November 16, 1972

**SUBJECT:** FACTORY-APPLIED LAMINATE ROOFING SYSTEMS BASED ON CHLOROSULFONATED POLYETHYLENE. (CSPE)

Members of the HUD Staff processing cases and inspecting construction shall use this information in determining acceptability of the subject material for the uses indicated.

This bulletin should be filed with Bulletins on Special Methods of Construction and Materials as required by prescribed procedures. Additional copies may be requisitioned by the field offices.

The technical description, requirements and limitations expressed herein do not constitute an endorsement, approval or acceptance by the Federal Housing Administration of the subject matter, and any statement or representation, however made, indicating approval or endorsement by the Federal Housing Administration is unauthorized and false, and will be considered a violation of the United States Criminal Code 18, U.S.C. 709.

Any reproduction of this bulletin must be in its entirety and any use in sales promotion or advertising is not authorized.

Subject to good workmanship, compliance with local codes, and the methods of application listed herein, the materials described in the bulletin may be considered suitable for FHA mortgage Insurance or Low Rent Public Housing Programs.

The eligibility of a property under these Programs is determined on the property as an entity and involves the consideration of underwriting and other factors not indicated herein. Thus, compliance with this bulletin should not be construed as qualifying the property as a whole, or any part thereof, as to its eligibility.

The methods of application for the materials listed herein are to be considered as part of the FHA Minimum Property Standards and shall remain effective until this bulletin is cancelled or superseded.

## SECTION I

USE:

Complete roofing and flashing system for factory installed new roof applications. Roofing applications shall be used only for flat, pitched or barrelled roof decks. The roofing of any other shaped surfaces shall be acceptable only when specific project installation details have been approved by the jurisdictional FHA authority. Roofing can be applied directly to the following surfaces: poured concrete, poured gypsum, lightweight insulating concrete, prestressed concrete, precast concrete, gypsum plank, wood plank, wood fiber, plywood, insulation board, and smooth asphalt.

Flashing usages include, through-wall, coping, counter and base roof applications.

## SECTION II

DESCRIPTION:

Chlorosulfonated Polyethylene is the chemical name of a synthetic rubber marketed under the name "Hypalon." Its chemical name is abbreviated as either CSM or CSPE. Although sheeting based on CSPE is not vulcanized before use, its mechanical properties are sufficient to allow it to be handled without damage. It does slowly vulcanize during its normal service life. Tables showing its resistance to solvents, chemical attack and weathering are available from the suppliers. Physical properties, test methods and performance requirements of the CSPE portion of the laminate roofing system shall be:

## CSPE CHARACTERISTICS

<u>Physical Property</u>	<u>Test Method</u>	<u>Performance Requirements</u>
Hardness, Durometer A	ASTM D 2240	85 + 5 points
Tensile Strength	ASTM D 412	1000 psi, minimum
Elongation at Break	ASTM D 412	350%, minimum
Brittleness Temperature	ASTM D 746	no failure @ -40°F
Tear Resistance	ASTM D 1004	225 lbs. per inch of thickness, minimum
Flame resistance	ASTM D 1692	Self Extinguishing

## LAMINATE CHARACTERISTICS

<u>Physical Property</u>	<u>Test Method</u>	<u>Performance Requirements</u>
0 Zone resistance 7 days, 300 pphm, 104°F	ASTM D 1149	No Visible cracks
Accelerated Weathering, Atlas twin enclosed carbon arc weather-o-meter	ASTM D 750 Cycle A	No visible change (1000 hrs. exposure)
*** Water Vapor transmission, permeance	ASTM E 96 procedure E	1.0 perm, max.
Roofing*	Laminated sheet of CSPE (20 Mil surfacing, $\pm$ 2 mils) and Neoprene-bound asbestos (15 Mil backing, $\pm$ 2 mils) 30 and 20-Mil thick sheeting of CSPE	
Flashing* (unbacked)	30 and 20-Mil thick sheeting of CSPE	
Flashing* (Asbestos backed)	Same as roofing	
Joint tape*	30 and 20 Mil-thick tape of CSPE	
Roofing Adhesive**	Neoprene latex adhesive or equal	
Tape Adhesive**	Solvent mixture	
Caulk**	One-part sealant based on CSPE or neoprene.	

\*Available in black, white, or gray.

\*\*See specifications section below.

## SECTION III

SPECIFICATIONS:

Roofing shall consist of 20-Mil-thick sheeting of CSPE laminated to Neoprene bound asbestos felt to produce a laminate of 35 Mils,  $\pm$  3 mils in total thickness. CSPE surface shall be uniform in thickness, smooth, free from blemishes, pinholes and discoloration and shall meet the performance requirements listed in the physical table shown above. All unbacked flashings and tapes shall be of calendared CSPE, shall be at least 20 Mils thick and shall be of a quality equal to the roof surface. Color and finish shall be agreed upon between purchaser and supplier.

The roofing adhesive shall be a water-dispersed adhesive, compounded to provide good wetting and adhesion to both the deck and the asbestos backing material. The adhesive should have an open time of at least ten minutes and must produce a waterproof film tearing bond greater than the cohesive strength of the laminate

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backing. Typical tape adhesives are solutions of CSPE in trichloroethylene, a nonflammable, non-toxic solvent. The concentration of CSPE and the application techniques may vary to accommodate a variety of installation conditions. In all cases, the overlapped area must be welded tight and void-free to produce a water tight system.

The one-part sealant shall conform to Federal Specification No. TT-S-00230C, Type II for "Sealing compound, synthetic rubber base, single component, Chemically Curing (non-sag)." Color and method of packaging shall be as agreed upon between purchaser and supplier. In all cases, adhesives and caulks must be compatible with the laminate roofing with regard to durability, non-staining properties, and structural elasticity.

SECTION IV

FIRE RESISTANCE:

When requested by FHA, certification by an approved independent testing laboratory shall be furnished stating that the specific factory-applied laminate roofing system has received either Class "C" Underwriters approval over combustible deck or a Class "A" Underwriters approval over noncombustible deck, as applicable.

SECTION V

INSTALLATION:

The installation procedure depends on substrate, temperature, roof size and shape, and other variable conditions. Specific installation procedures shall be in strict accordance with the manufacturer's instructions and all applicable FHA Minimum Property Standards.

General Procedure:

- 1) Roofing adhesive is applied to clean deck with roller or squeegee. (Hot steep asphalt may be used in some applications).
- 2) Roof-sized panel is unrolled and broomed into adhesive.
- 3) Suitable flashings and expansion joint covers are installed as specified.
- 4) Intermodular seams, if applicable, are sealed in the field using joint tape laid into wet tape adhesive or heat sealed. It is necessary to complete field seaming immediately after positioning the modules.

## SECTION VII

WARRANTIES:

Manufacturer- The manufacturer shall warrant that all materials supplied with this system for a specific installation will be free of manufacturing defects. When this system has been installed according to instructions, the manufacturer shall warrant that the installed materials will not change their rubber-like properties due to weathering for 20 years.

## SECTION VIII

SYSTEM ACCEPTANCE:

The roofing installer shall supply to the owner a properly executed roofing bond acceptable to the HUD/FHA field office. The time covered by this bond shall not exceed the period specified by the manufacturer or installer. The minimum time period covered by the bond shall not be less than 5 years.

The HUD field office may at its option, in lieu of roofing bond, require the installer to submit evidence of five (5) years or more of satisfactory installation experience for the system specified or furnish a Guarantee- Inspection program.

Producers shall be prepared to provide certification to HUD field offices that their roofing system complies in all respects with this bulletin. When considered necessary by the field office, test data may be required.

LABELLING:

Each roll, package or carton shall be labeled or stamped with the name of the manufacturer, type of product, weight, thickness and gauge as applicable. The product shall bear the Underwriters' Laboratories, Inc. (or other acceptable testing agency) Class A, B, or C label as appropriate.