

# Anejo IV

## Roofing Specifications

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### PART I - GENERAL

#### 1.1 SUBMITTALS

A. Product data: Within 10 calendar days after the Contractor has received the Owner's Notice Proceed submit:

1. Materials list of items proposed to be provided under this Section.
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
3. Manufacturer's recommended installation procedures which, when approved by the Engineer, will become the basis for accepting or rejecting actual installation procedures used on the work.

#### 1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use of subcontractor is not allowed.

C. Comply with codes, ordinances, rules and regulations of all governmental authorities having jurisdiction on the work, and with the following standards as applicable to the work:

D. Any approved agency having a service for the inspection of material and finished products during manufacture.

#### 1.3 REFERENCES

ASTM - American Society of Testing and Materials

FM - Factory Mutual

OSHA - Occupational Safety and Health Administration

UL - Underwriters Laboratories, Inc.

NFPA - National Fire Protection Association

#### 1.4 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of manufacturers recommendations.

**PART 2 - PRODUCTS**

**2.1 SBS MODIFIED BITUMINOUS (COLD) SYSTEM**

A. Two (2) Ply Styrene Butadiene Styrene (SBS) Modified Bituminous Composite Reinforcement Roofing System Consists of:

1. One (1) Ply as Base consisting of glass fiber reinforcement SBS Modified Bituminous Membrane. The material shall meet or exceed the requirements of ASTM 6163-00 Type I Grade S.

- Thickness, min., mils (mm) 80 (2.0)
- Net mass/ unit area, min lbs/100 ft<sup>2</sup> (g/m<sup>2</sup>) 45(2197)
- Max. load at 0 ± 3.6°F (-18 ± 2°C), MD and XMD, min., before and after Heat conditioning, lbf/in (KN/M) 70(12.3)
- Elongation at 0± 3.6 F (-18 ± 2°C), Before and after heat conditioning, (%) 1
- Elongation at 73.4± 3.6 F(23 ± 2°C), MD and XMD, min., at max. load, Before and after heat conditioning, (%) 2
- Tear strength at 73.4° ± 3.6°F (23 ± 2°C) 35(156)
- Roll Min. Weight Per 100 sq. ft. 45 Lbs. (20.5 Kg.)

2. One (1) Ply as Cap Roll Surfacing, consisting of a Polyester Reinforced SBS Modified Ceramic Granule Covered Modified Bituminous Membrane. Material shall meet or exceed ASTM D5147 Standard Test Method and requirements of ASTM D 6164-00Type I Grade G and UBC Standard 15-6-E, Standard Specification for SBS Modified Bituminous Sheet Materials Using Polyester Reinforcement.

- Tickname, min., mills (mm) 130 (3.3)
- Net mass/unit area, min lbs/100ft<sup>2</sup> (g/m<sup>2</sup>) 75 (3661)
- Max. load at 0 ± 3.6°f (-18 ± 2°C), MD and XMD, min., before and after Heat conditioning, lbf/in (KN/M) 70 (12.3)
- Elongation at 0 ± 3.6 F (-18 ± 2°C), Before and after heat conditioning, (%) 20
- Elongation at 73.4 ± 3.6 F (23 ± 2°C), 35

MD and XMD, min., at max, load, before  
And after heat conditioning, (%)

- Tear strength at 73.4' ± 3.6°F (23 ± 2°C), 55 (246)  
Min., lbf (N)
  - Roll Min. Weight Per 100 Sq. Ft. 75 LBS. (34.1 Kg.)
3. Cold Adhesive: Polymer (SBS) Modified Bitumen Adhesive (MBA) Solvent Based Cold Process Asphaltic Adhesive, Asbestos Free, Specially Formulated to Bond Modified Membranas to Insulation and other Membranas, in Compliance To ASTM 3019 Type III And ASTM D3409. Application requires min. 1.5 gallons Per Square in smooth surface, as required in UBC. Approximate weight: 10 Pounds per Gallons or 50 Lbs. Per Gallons Per Pall.
  4. Flashing, cants, stops, insulation anchorage and accessories acceptable to the Roofing Systems Manufacturer.

**B. Installed (Cold) SBS System Quality Assurance**

1. Weight of Assembled System (Cold) 168 Lbs./100 Ft.<sup>2</sup>
  - Component Minimum Weights
    - a. Mineral Surfaced SBS Modified Granular Surfaced Bitumen Membrane (One Each) 75 Lbs.
    - b. Modified Bitumen Adhesive For Cap (One Spread) 18 Lbs.
    - c. Glass Fiber Reinforcement Bitumen SBS Modified Bituminous Membrane (One Each) 45 Lbs.
    - d. Modified Bitumen Adhesive For Base (One Spread) over insulation board 3gal/100sq. ft.) 30 Lbs.

**PART 3 - EXECUTION**

**3.1 INSTALLATION PROCEDURE AND REQUIREMENTS**

Strictly follow manufacturer's specifications for installation.

**3.2 APPLICATION OF INSULATION AND ROOFING:**

1. Apply insulation, cold adhesive, or membranes over clean dry roof deck in strict conformance with the manufacturer's specifications.

2. Cant strips shall be provided at all intersections of roof surfaces with vertical walls, parapets and curbs. Roofing layers shall be turned up against cant strip and trimmed parallel with upper edge of cant strip.
3. Roofing shall fit neatly around all pipes, vents, drains, smoke vents and curbs and be sealed with plastic roof cement. Metal flanges of smoke vents, pipes, fans, etc., shall be embedded in cold adhesive between layers of roofing. Edges shall be sealed in roofing with 6" wide cold adhesive saturated web fabric, mopped on.
4. At all open edges, treated wood blocking, equal in thickness to the insulation, shall be firmly fastened to the roof decking as indicated on the drawings. Around all roof openings, vents, stacks, drains, etc., treated wood blocking nailer strips shall be installed and securely fastened to the metal deck.
5. Flashings: Aluminum metal as specified in the drawings attached.
6. All materials shall be applied over a clean, dry insulation board as specified by the manufacturer.

### 3.3 SITE CONDITIONS

1. The Contractor shall at all times keep materials and equipment in orderly, safe arrangement, minimize conflicts with other trades, protect surrounding existing building and equipment.
2. At the completion of the work, or whenever directed, the contractor shall remove all rubbish and unused materials accumulated in connection with the work, and leave the roofs in a clean and acceptable condition.
3. Strictly comply with all safety regulations.

### 3.4 APPROVALS

1. All roofing materials method of application and method of fastening shall conform to UCB requirements for Class I-120 uplift and UCB Class A Roof. Evidence of compliance is required for submittals approval.
2. All materials shall be delivered in packages bearing the manufacturer's label or identifying mark. Each package of asphalt shingles, mineral surfaced roll roofing, life-retardant-treated wood shingles and shakes, modified bitumen, thermoplastic and thermoset membranes, and build-up roofing ply materials shall bear the label of an approved agency having a service for the inspection of material and finished products during manufacture.

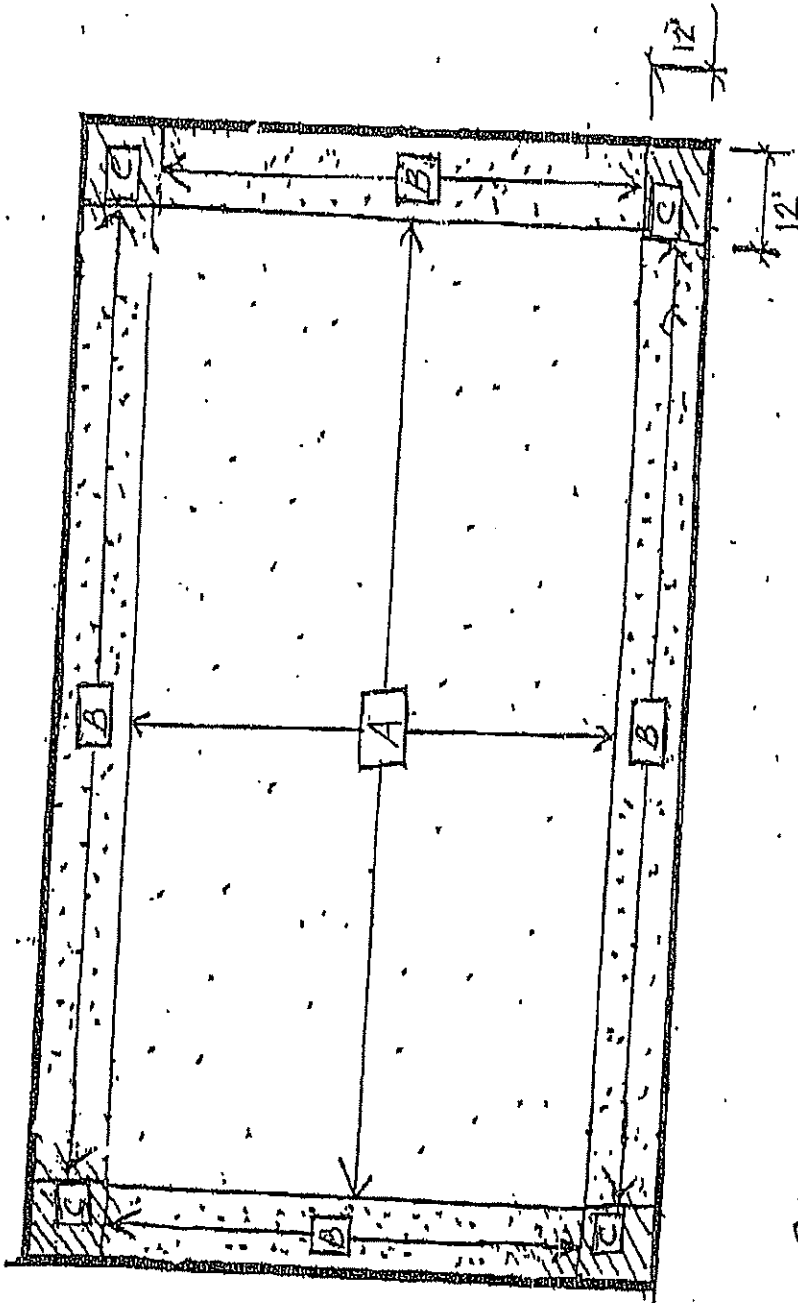
### 3.5 GUARANTEE:

Roofing and flashing shall be guaranteed to remain water tight and in good conditions for a period of twelve (12) years from the date of acceptance of the work by the owner. The Contractor shall provide bonded roof guarantee through a surety Company for the total cost of the roofing work, or other guarantee acceptable to the Owner to make any repair and replacement needed on the roof without any additional cost to the Owner, for any part of the roof that fails to meet the guarantee during that period.

In lieu of the written bonded roof guarantee through a surety Company referred to above, the Contractor may file with the Owner a 12 years guarantee of a responsible manufacturer of the materials used or to be used in the roofing work; provide, however, that in consideration thereof, the Contractor hereby authorizes the Owner (1) to proceed with and make any roof repairs for the account and at the expenses of the Contractor in the event the later or any

subcontractor thereof fails to undertake such work within 7 days after being requested in writing to do so as an obligation included in the guarantee of the Contractor, any amounts expended by the owner pursuant to (1) above, as well as the amount of any claim, action or demand of the Owner against the Contractor, predicated upon or arising from such roofing work so guaranteed by the Contractor.

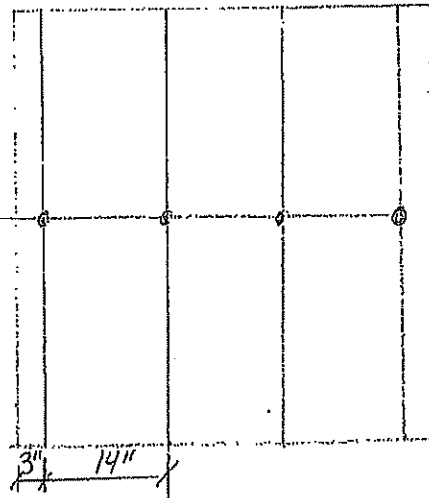
# Anejo V



CANTIDAD DE ANCLAJES EN  
RELACION AL ÁREA DEL TECHO  
(POR PLANCHAS DE AISLACION 4'x4')

A - CENTRO / B - PERIMETRO / C - ESQUINA

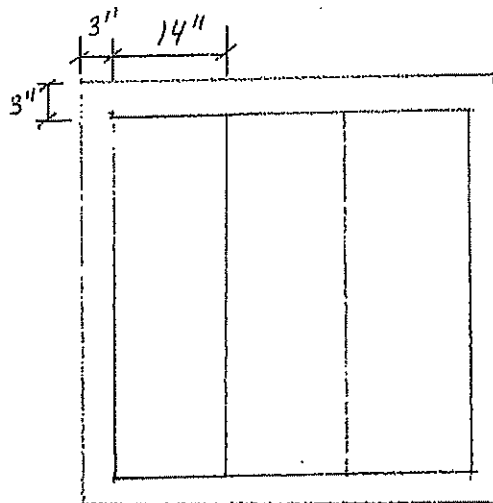
TIRA DE POLIURETANO  
ADHESIVO DE  
3/4" Ø min. (TÍPICO)



CENTRO (A)

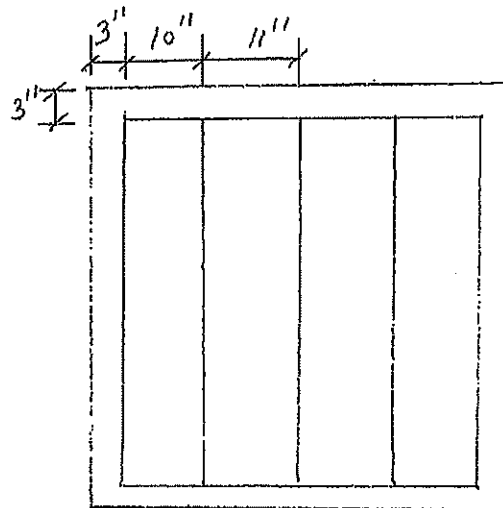
PLANCHA DE  
AISLACION  
SEGUN ESPECIFICADA

APLICACION DE 16 pies  
LINEALES DE POLIURETANO  
ADHESIVO POR PLANCHA  
4'x4'



PERIMETRO (B)

APLICACION DE 21 pies  
LINEALES DE POLIURETANO  
ADHESIVO POR PLANCHA  
4'x4'



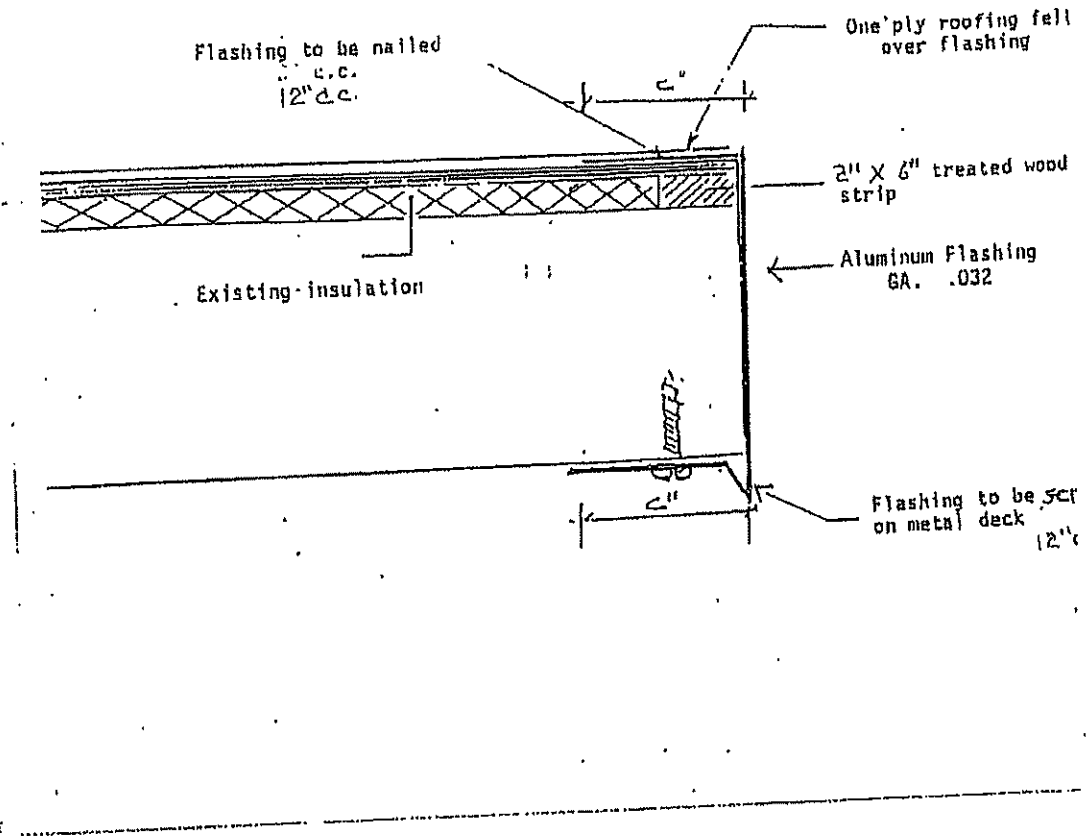
ESQUINA (C)

APLICACION DE 24.5 pies  
LINEALES DE POLIURETANO  
ADHESIVO POR PLANCHA  
4'x4'

DETALLE POLIURETANO ADHESIVO  
MITS

# Anejo VI

## FLASHING DETAIL NOT TO SCALE



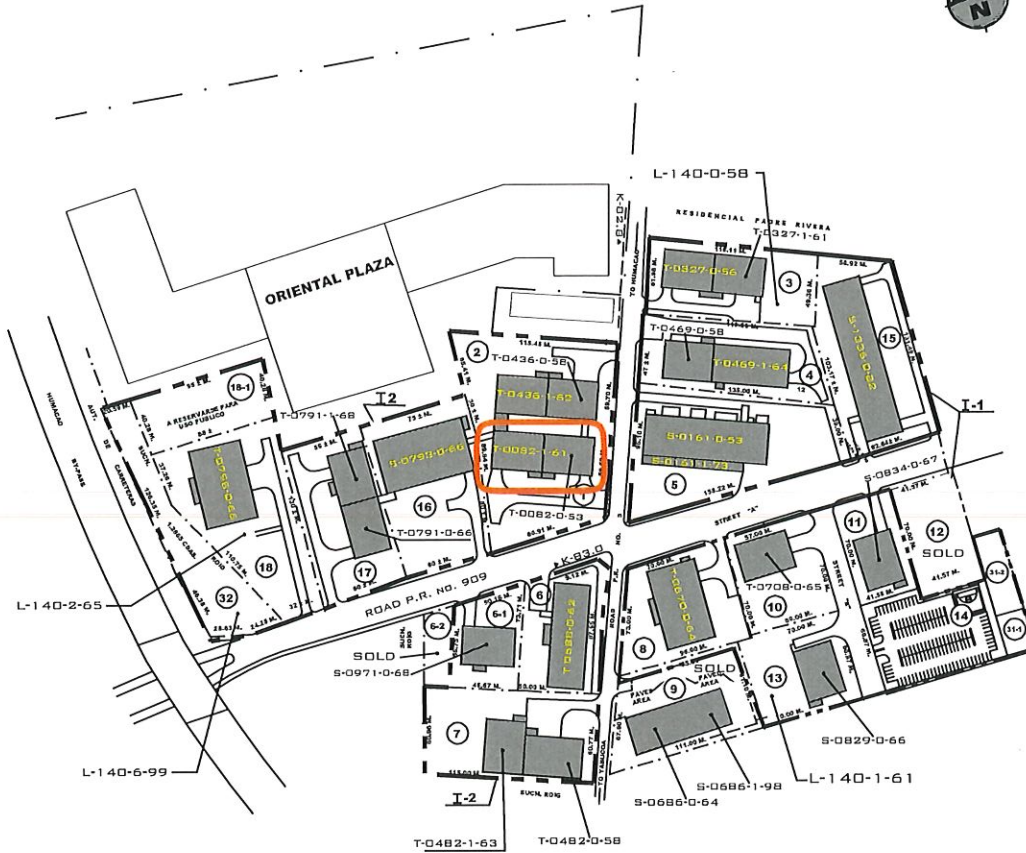


**MUNICIPALITY OF HUMACAO  
CATAÑO WARD**

**L-140-0-58-00**

Cordenadas: T-0082-0-53  
18.13978, -65.82763

**L-140-1-61-00  
L-140-2-65-00  
L-140-6-99-00**



LEGEND:	CADASTRE NUMBER				
	MUNICIPALITY	MAP		BLOCK	PARCEL
<p>--- LOT LIMIT</p> <p>==== PRIDCO PROPERTY LIMIT</p> <p>—— BUILDING</p> <p>—— ROADS OR CURB SIDE</p>	51	1:10,000	1:1,000	4	0
<p>SCALE <u>NOT SCALE</u>    REV. DATE <u>Agosto - 2022</u></p> <p>DRAW DATE <u>AUG - 28 - 1964</u>    ZONING <u>I-1, I-2</u></p>					