

Roofing

The district recently hired DK Haney as a roofing consultant to survey each roof in the district and make recommendations and cost estimates to repair the roofs at each school. Though this five year facility plan considered the Haney information, it does not include all of the suggested work in the roofing cost estimates. Our assessments of the roofs, in particular the metal roofing, determined that flashings and sealants were more likely the cause of roof failures and should not require a complete replacement. As a result, our recommendations and therefore our cost estimates only reflect replacing the flashings, screws, and sealants used in the metal roofing systems. The metal panels should last indefinitely in the Eagle Pass environment.

Before the district begins to contract with companies to perform the necessary roofing, the type of roofing system to be installed should be considered.

Low Slope Roofing:

For low slope roofs EPISD has used built-up roofing and more recently modified bitumen systems. These roofing types have been appropriate for EPISD because they were inexpensive, gave long term warranties, and local people are available to repair them. However, having non-manufacturer approved roofers provide repairs is grounds for voiding any manufacturer's warranty and should only be considered an option at the end of the warranty period. Modified bitumen roofs currently cost \$5.00 per s.f. new without insulation and come with a 15-20 year warranty.



Modified Bitumen Roof

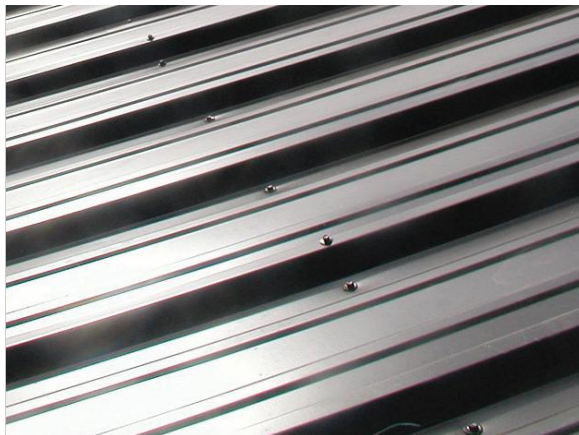


TPO roofing

The least expensive system is currently a plastic sheet material called TPO. In addition to cost, TPO roofs offer several other advantages to the user. They are typically white which helps reflect heat, they are light weight, and they can be overlaid on top of existing systems. The most cost effective roofing system available for the re-roofing of EPISD projects is a TPO roof system over what is already there. *The primary disadvantage of TPO systems is the installer and/or repair person will have to come from out of town.*

Metal Roofing:

There are two types of metal roofing used on EPISD facilities. The first is a standing seam roofing system that uses clips to hold the panels to the structure. The second are “screw thru” systems that have screws that penetrate the panels into the structure.



Screw Thru roof



Standing seam roofing

Examples of the screw thru roofing systems in the district are Central Office and the elementary school gyms. Examples of standing seam roofs include Memorial Junior High, LDC and the Sam Houston vintage elementary schools.

In general, the metal roofing panels will last as long as 50 years in the Eagle Pass environment. However, the metal roof's weakness are flashings and screw penetrations. For standing seam roofs, the flashings require sealant beads to prevent moisture penetration. The sealant beads will typically break down in about 10 years under the harsh Texas sun. The same goes for the neoprene washers sealing the screws in the “screw thru” systems. As a result, the metal both types of metal roofing systems will require significant repair work after a 10 year period. To replace metal roofing will cost \$4.00 per s.f. while screw replacement and flashing sealants we are estimating at \$1.00 per s.f.

Roofing Recommendations:

1. EPISD should consider a spacing out the necessary roofing work over a 5 year period to avoid a future similar situation when significant roofing work must be dealt with at one time. (See recommendation #2)
2. As part of the budget process, EPISD should consider a schedule for replacing roofing on a yearly basis. Generally speaking, low slope roofs will require replacement every 20 years and metal roofing will need significant maintenance every 10 years. In addition to scheduled repairs / replacements, emergency roofing repair funds should be allocated with every budget year as suggested by the Maintenance department.
3. A roofing consultant should be hired to develop a project scope of work and oversee the installations based on the DK Haney report and the budget requirements of the district.
4. For low slope roofing, we recommend a TPO system with all previous roofing to be removed to the original cover board layer or concrete decking. We recommend a new cover board be installed on concrete decks. Furthermore, we recommend as many low slope roofs as possible be awarded to one vendor within 150 miles of Eagle Pass.
5. For metal roofing we recommend that the screws and flashing sealants be replaced. Flashing material should also be inspected and replaced as indicated in the DK Haney report.
6. A roofing consultant should be hired to review the condition of the roofs on a regular basis. This will be required as part of the warranty terms where new roofs are installed.

Roofing priority list and cost estimate:

Suggested Replacment Priority:			Roof Report Grade:		
1	High School	New roof @ A, B, C wing, Central area, Gym, Band Hall,	C w/ F's		\$ 599,560.08
2	Memorial Jr	Repair roof leak in kitchen	F		\$ 8,000.00
3	Benavides	Replace roof @ main building	C w/ F's		\$ 172,500.00
4	Kirchner	Replace roof @ main building	C w/ F's		\$ 39,729.00
5	Kennedy	Replace roof @ main building	B w/ F's		\$ 72,737.50
6	San Luis	Replace flashings and screws @ main	D		\$ 61,508.00
7	CC Winn	Replace roof @ main building	D		\$ 1,146,920.25
8	Seco Mines	Replace gym flashing and screws	F		\$ 11,400.00
9	Ray Darr	Replace gym flashing and screws			\$ 11,400.00
10	Houston	Replace gym flashing and screws	F		\$ 11,400.00
11	Glass	Replace flashing and screws @ Main	B w/ D @ main		\$ 65,000.00
12	Lee	Replace roof @ main building	C w/ F's		\$ 189,750.00
13	Old Jr High	Replace roof @ main building			\$ 183,750.00
14	Houston	Replace flashings and screws @ main	C		\$ 56,476.00
15	Graves	Replace roof @ main building	C w/ F's		\$ 155,250.00
16	Austin	Replace roof @ main building	B w/ F @ Main		\$ 150,212.50
17	LDC	Replace flashings and screws @ main	C		\$ 39,877.00
18	Benavides	Replace gym flashing and screws	B		\$ 11,400.00
19	Memorial Jr.	Replace flashings and screws @ main	C		\$ 152,200.00
20	EPJH	Replace roof @ main building	C		\$ 315,000.00
21	Glass	Replace gym flashing and screws	B		\$ 11,400.00
22	Gallego	Replace gym flashing and screws	B		\$ 11,400.00
23	Day Care	Repair roof leaks			\$ 32,200.00
24	Ray Darr	Repair roof leaks			\$ 11,500.00
25	Kirchner	Replace flashings and screws @ classroom wing			\$ 8,956.00
26	Gallego	Repair roof			\$ 6,000.00
27	Cerna	Repair roof leaks	B		\$ 600.00
28	Gonzalez	Repair roof	B		\$ 16,000.00
29	Liberty	Replace flashings and screws @ main			\$ 51,377.00
30	Liberty	Replace gym flashing and screws			\$ 11,400.00
31	Seco Mines	Replace flashings and screws @ main			\$ 44,019.00
32	Mancha	Repair roof leaks	A		\$ 1,200.00
33	RVLA	Repair roof leaks	B		\$ 2,000.00
34	Lee	Replace gym flashing and screws	B		\$ 11,400.00
35	Central Office	Replace flashings and screws			\$ 27,830.00
36	Webster	Repair roof leaks			\$ 8,000.00
37	Multi Plex	Repair roof leaks			\$ 8,000.00
Total Roofing Recommendations and Estimate:					\$ 3,717,352.33