Another round

Testing of polymer-modified bitumen sheet products shows some product improvements

by Mark S. Graham

Earlier this year, NRCA conducted limited testing of polymer-modified bitumen sheet products, which serves as a follow-up to similar testing NRCA conducted during 2011 and 2015. The purpose of the testing is to determine whether polymer-modified bitumen sheet products are being manufactured in compliance with applicable product standards and whether compliance has improved since the previous testing.

Previous testing

In 2011, NRCA tested 16 polymer-modified bitumen sheet products and found 10 of the products did not comply with one or more of the physical property requirements provided for in the applicable product standards. Low-temperature flexibility and granule loss were the physical properties where noncompliance was identified.

In 2015, NRCA tested 13 polymer-modified bitumen sheet products and found four of the products did not comply with one or more of the physical property requirements provided for in the applicable product standards. Again, low-temperature flexibility and granule loss were the physical properties where noncompliance was identified.

Because polymer-modified bitumen sheet products' compliance

with applicable ASTM International product standards is a building code requirement, our noncompliance findings were of specific concern.

Latest testing

NRCA obtained full rolls of 18 new (uninstalled) polymer-modified bitumen sheet products from 10 manufacturers; 11 products were SBS polymer-modified bitumen, and seven were APP polymer-modified bitumen. The samples were obtained from NRCA contractor members and members of the Midwest Roofing Contractors Association's Technical and Research Committee from material stock they had on hand.

Product specimens were tested as received for low-temperature flexibility and granule loss according to the applicable ASTM International test methods. Test results are shown in the figure.

The ASTM International product standards for polymer-modified bitumen sheet products provide for a maximum allowable low-temperature flexibility of 0 F for SBS products and 32 F for APP products. All the SBS products tested and five of the seven APP products tested complied with ASTM International's low-temperature flexibility requirements.

ASTM International's product standards also provide for a maximum allowable granule loss of 2 grams for SBS and APP products. All but one of the granule-surfaced SBS products tested and all the granule-surfaced APP products tested complied with ASTM International's granule loss requirement.

Recommendations

NRCA recognizes the single-roll testing of multiple products used in this limited testing program may not be statistically representative of all polymer-modified bitumen sheet products being manufactured, but the latest test results show a notable overall improvement in compliance.

However, the tested low-temperature flexibility values for Samples 7-A and 7-B are particularly concerning given the magnitude of the differences between ASTM International's maximum allowable values and both of these samples; though they are different products, they are from the same manufacturer. There are several reasons why specific products may not achieve adequate low-temperature flexibility values, including inadequate polymer content and dispersion during manufacturing. Variability in or a lack of adequate quality control during manufacturing likely are exacerbating factors.

To address this concern, NRCA suggests designers, specifiers and purchasers of polymer-modified bitumen sheet products seek out manufacturers and products with third-party certifications of compliance with applicable ASTM International product standards.

Similar third-party certifications are common among asphalt shingle products, and several manufacturers have third-party certifications for their polymer-modified bitumen sheet products. A UL product certification is one example of a third-party certification of compliance. Also, products recognized by ICC-ES or Miami-Dade County typically incorporate third-party certifications of compliance.

Polymer-modified bitumen sheet product manufacturers having third-party certifications of compliance typically will make these certifications readily known and accessible. NRCA encourages other manufacturers to do so.

Additional information about polymer-modified bitumen sheet products is provided in Chapter 5-Roof Membranes of *The NRCA Roofing Manual: Membrane Roof Systems—2019*.

Information about the ASTM International test method and product standards applicable to polymer-modified bitumen sheet products is provided in "Specifying modified bitumen sheet products," January 2019 issue.

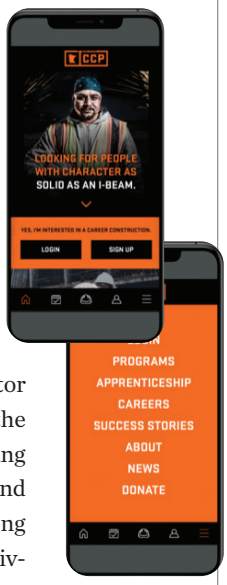
Polymer-modified bitumen test results

Sample (Manufacturer and product)	Low-temperature flexibility (F) (as received)	Granule loss (g) (as received)
SBS products		
1-A	-13	0.56
3-A	-27	NA
3-B	-15	0.48
4-A	-16	1.13
5-A	-15	2.05
6-A	-13	0.34
6-B	-13	0.53
6-C	-9	0.55
8-A	-20	0.09
9-A	-8	0.53
10-A	Less than -40	1.16
ASTM specification	0 (maximum)	2.0 (maximum)
APP products		
2-A	21	0.95
2-B	10	NA
2-C	14	0.60
2-D	10	0.65
2-E	9	NA
7-A	Greater than 41	0.10
7-B	Greater than 41	0.88
ASTM specification	32 (maximum)	2.0 (maximum)

Notes:
NA = Not applicable. Granule loss testing does not apply to smooth-surfaced sheet products.
Shaded values denote those outside of ASTM International specification values.

MARK S. GRAHAM is NRCA's vice president of technical services.
@MarkGrahamNRCA

New app recruits young people to construction



The Construction Careers Foundation has created a new app to encourage young people from middle school through their early 20s to consider careers in Minnesota's construction industry, according to www.constructiondive.com.

Based in St. Paul, Minn., the Construction Careers Foundation is dedicated to providing construction career exploration opportunities for Minnesota youth. According to Sarah Lechowich, senior director of the Construction Careers Foundation, the Construction Trades app seeks to engage young people based on how they already receive and share information. For example, many young people prefer notifications as a means of receiving information.

The app is intended to bolster efforts from the Construction Careers Foundation's Construction Career Pathways website to attract and connect potential construction workers with skilled apprenticeship programs in Minnesota. Once a student or potential worker has filled out his or her preferences and information, the app can ping him or her to bring a local apprenticeship opening to his or her attention.

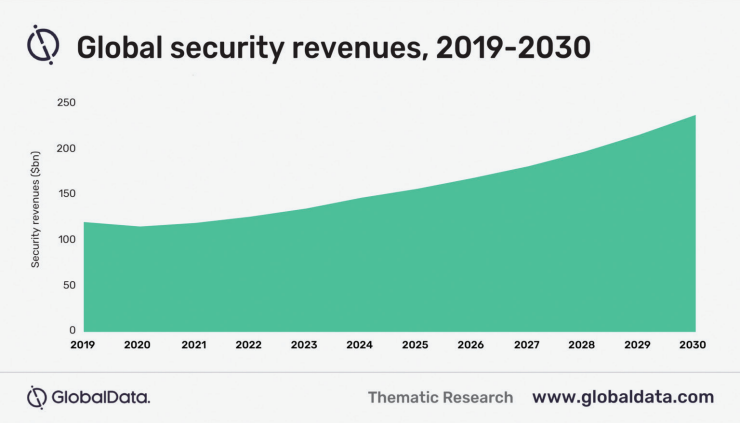
"That's the whole reason the app was designed—to meet youth where youth are," Lechowich says.

The Construction Careers Foundation also is working with every public school in the state of Minnesota and several private schools to advance the initiative. Teachers point students who show interest or proclivity toward a construction career to the app. The technology is an addition to efforts from the foundation at career fairs and job days. The foundation also sends apprentices to schools to give students hands-on experiences.

To read success stories from construction industry professionals in Minnesota, go to www.professionalroofing.net.

The COVID-19 pandemic has slowed in-person demonstrations and chances to connect directly with students through classrooms, but the Construction Careers Foundation plans to push for more app downloads in the fall. The next phase of the app also is in development and will include direct messaging capabilities between tradespeople and recruits.

The Construction Trades app is available through the Apple App Store and Google Play.



Cybersecurity spending will fall in 2020 but recover

A recent GlobalData report has revealed cybersecurity spending will decrease in 2020 as a result of the economic impact of the COVID-19 pandemic, but the industry will recover to be worth nearly $238 billion by 2030.

In the report, Cybersecurity—Thematic Research, GlobalData predicts the cybersecurity industry will experience a compound annual growth rate of 6% between 2019 and 2030. The report also reveals many organizations are plagued by cyberattacks that are advanced, persistent and capable of wrecking a business's operations and reputation.

> "Cybersecurity spending will decrease in 2020 as a result of the economic impact of the COVID-19 pandemic"

To counter modern cyberattacks, most organizations are relying on artificial intelligence to improve threat intelligence, prediction and protection. However, the report warns future AI-driven cyberattacks are likely.

"Cybersecurity is an unrelenting battle," says David Bicknell, principal analyst, thematic research, for GlobalData. "Companies manage an array of assets, including infrastructure, applications, managed and unmanaged endpoints, mobile devices and cloud services, all of which can be attacked. The types of attacks include phishing, the most popular, and ransomware, which is becoming the most lucrative. The ongoing COVID-19 pandemic has highlighted why cyber-naïve remote workers have needed security awareness training to thwart hacker attacks."