

Table 3-13 – Prescriptive Criteria for Roofing Products for Nonresidential Buildings

			Climate Zones															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Roofing Products	Low-sloped	Aged Reflectance	NR	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	NR
		Emittance	NR	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	NR
		SRI	NR	64	64	64	64	64	64	64	64	64	64	64	64	64	64	NR
	Steep Sloped (less than 5 lb/ft²)	Aged Reflectance	NR	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
		Emittance	NR	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
		SRI	NR	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Steep Sloped (5 lb/ft² or more)	Aged Reflectance	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
		Emittance	NR	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
		SRI	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Table 3-14 – Prescriptive Criteria for Roofing Products for High-rise Residential Buildings and Guest Rooms of Hotel/Motel Buildings

			Climate Zones																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Roofing Products	Low-slope	Aged Reflectance	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.55	0.55	NR	0.55	0.55	0.55	NR
		Emittance	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.75	0.75	NR	0.75	0.75	0.75	NR
		SRI	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	64	64	NR	64	64	64	NR

Table 3-15 – Prescriptive Criteria for Roofing Products for Relocatable Public School Buildings, Where Manufacturer Certifies Use in All Climate Zones

Roofing Products –	Aged Reflectance/Emittance
Low-Sloped	0.55/0.75
SRI	64
Steep-Sloped – Less than 5 lb/ft²	0.20/0.75
SRI	16
5 lb/ft² or more	0.15/0.75
SRI	10

If the aged value for the Reflectance is not available in the CRRC’s Rated Product Directory, then the equation in Section 3.4.1 can be used until the aged rated value for the reflectance is posted in the directory.

There are four exceptions to the minimum prescriptive requirements for solar reflectance and thermal emittance or the SRI:

1. Wood-framed roof assemblies in climate zones 3 and 5 are exempt if the roof assembly has a U-factor of 0.039 or lower.
2. Metal framed roofs in climate zones 3 and 5 are also exempted if the roof assembly has a U-factor 0.048 or lower.
3. Roof area covered by building-integrated photovoltaic panels and building integrated solar thermal panels is not required to meet the cool roof requirements.
4. If the roof construction has a thermal mass over the roof membrane with a weight of at least 25 lb/ft², it does not need to meet the above requirement.

Example 3-8

Question

According to the provisions of the Standards, are cool roofs optional for nonresidential buildings or high-rise residential buildings?

Answer

The answer depends on the compliance approach you chose. For prescriptive compliance, compliance with solar reflectance and thermal emittance, or SRI is required where indicated in Standards Tables 143-A, B, and C. In the performance approach, reflectance and emittance values less than the minimum prescriptive requirements may be used; however, any deficit that results from this choice must be made up by improving other energy efficiency features in the building, which include envelope, mechanical, and lighting systems.

Example 3-9

Question

Must all roofing materials used in California, whether cool roof or not, be certified by the CRRC and labeled accordingly?

Answer

It depends on the compliance approach you are using. If you are using the prescriptive envelope component approach, the answer is yes; the roof must be certified and labeled by CRRC for nonresidential roofs. On the other hand, if you are using prescriptive overall envelope TDV energy approach or the performance approach to receive compliance credit, you can either obtain a CRRC certification, OR use a default reflectance of 0.10. Note that using default values instead of CRRC certificates may result in a significant energy penalty that must be made up by increasing energy efficiency in other building features. Also note that the default reflectance for asphalt roofs is different than tile and metal roofing products; see Example 3-15.

Example 3-10

Question

When re-roofing with gravel, must the roof meet reflectance and emittance requirements of the Standards? Is CRRC certification required?