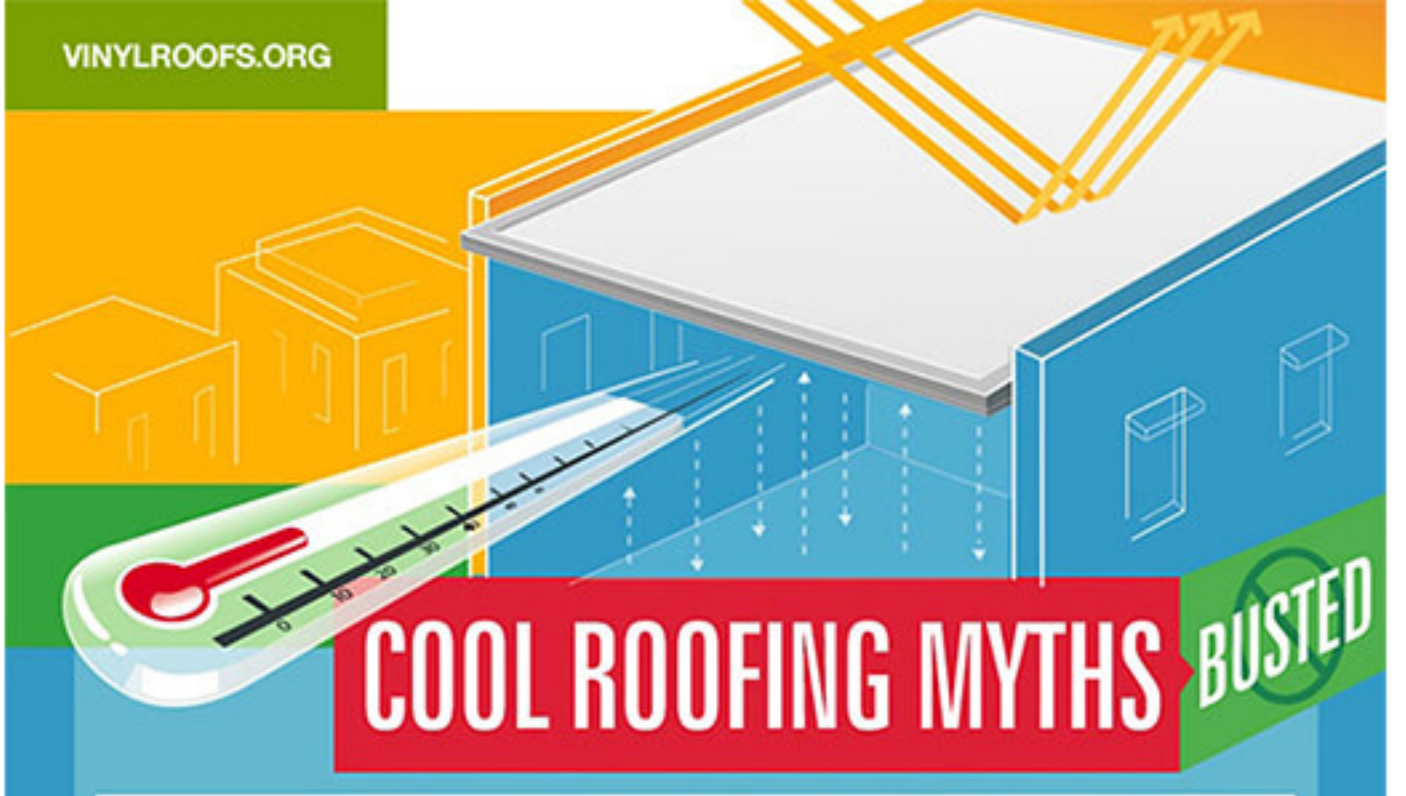
VINYLROOFS.ORG



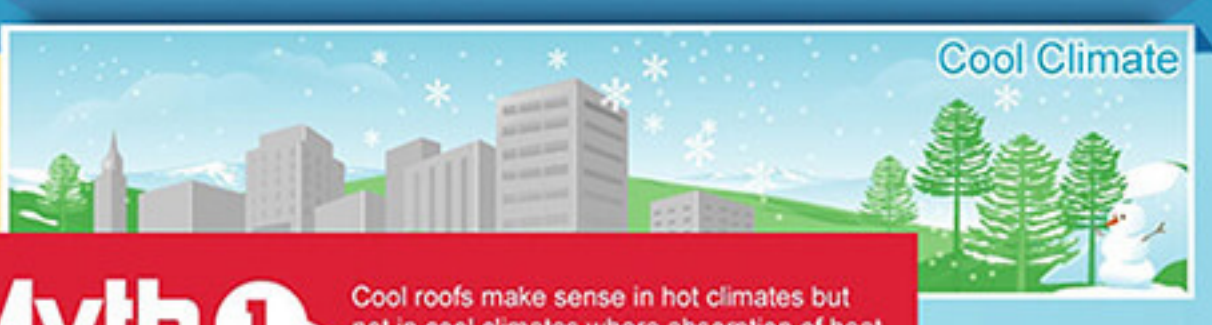
COOL ROOFING MYTHS BUSTED

What Is A Cool Roof?

A cool roof reflects a large percentage of sunlight, and quickly emits any heat that is absorbed into the roofing membrane. Less heat entering the building through the roof reduces the need for and cost of building cooling.

In one case study

In one case study, a 100,000 sq ft building in Austin, TX with a cool roof saved 14% on peak hour cooling cost, which resulted in an annual energy savings of $9500



Myth 1

Cool roofs make sense in hot climates but not in cool climates where absorption of heat from the sun helps to warm the building.

Busted

Even in cool climates, cool roofs can save more money than black roofs.

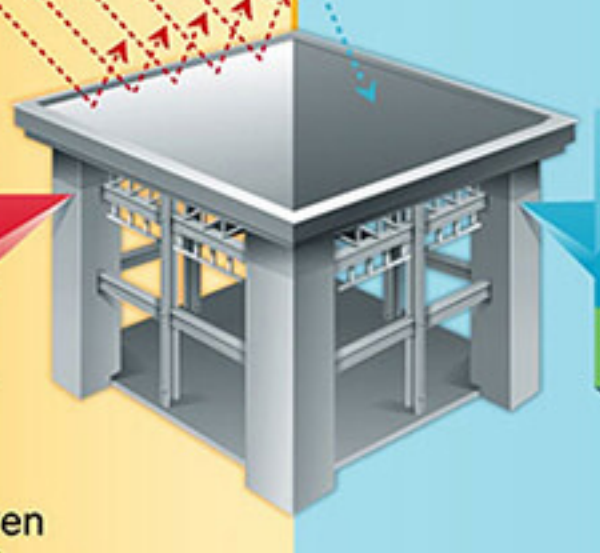
SUMMER

- Summer days are longer — More sunlight for reflection
- The sun is higher in the sky — More heat is generated
- More days of sunshine — More solar radiation

WINTER

- Winter days are shorter — Less sunlight for heating
- The sun is much lower to the horizon — Less heat is generated
- Overcast skies & roofs covered by snow — Less solar radiation for heating

Solar radiation in the summer is 5 times greater than in the winter



The solar radiation cool roofs reflect away during summer help save:

$29.73/MMBtu

Buildings are cooled with electricity during summer

Black roofs absorb solar energy during winter and help save:

$9.10/MMBtu

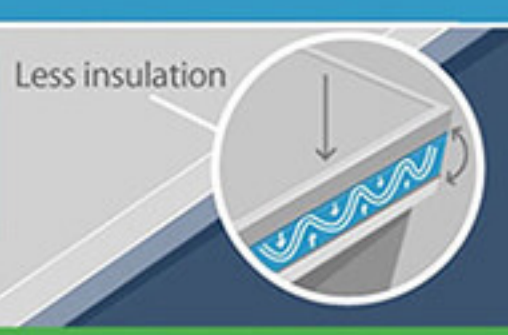
Buildings are heated with natural gas during winter

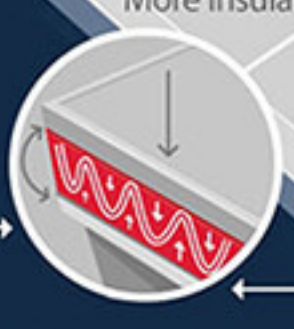
In summary, even in cool climates

Cooling Cost Savings with Cool Roofs **Can outweigh** Heating Cost Savings with Black Roofs

Myth 2

Cooling energy cost benefit decreases with increased amounts of thermal insulation which is common in northern states.





Busted

With increased amount of insulation, the cooling savings are smaller but still positive

1. Increased insulation reduces movement of both hot and cold air. Therefore, black roof heating benefits decrease as well.
2. As illustrated in Myth 1, even in cool climates, cooling savings are greater than heating savings. The savings from cool roofs remain higher than those from black roofs even with increased thickness of insulation.

Myth 3

Cool roofs' benefits are reduced when the roof becomes dirty.

Busted

Most cool roofs don't lose significant cooling benefits when subject to various forms of soiling relative to black roof.

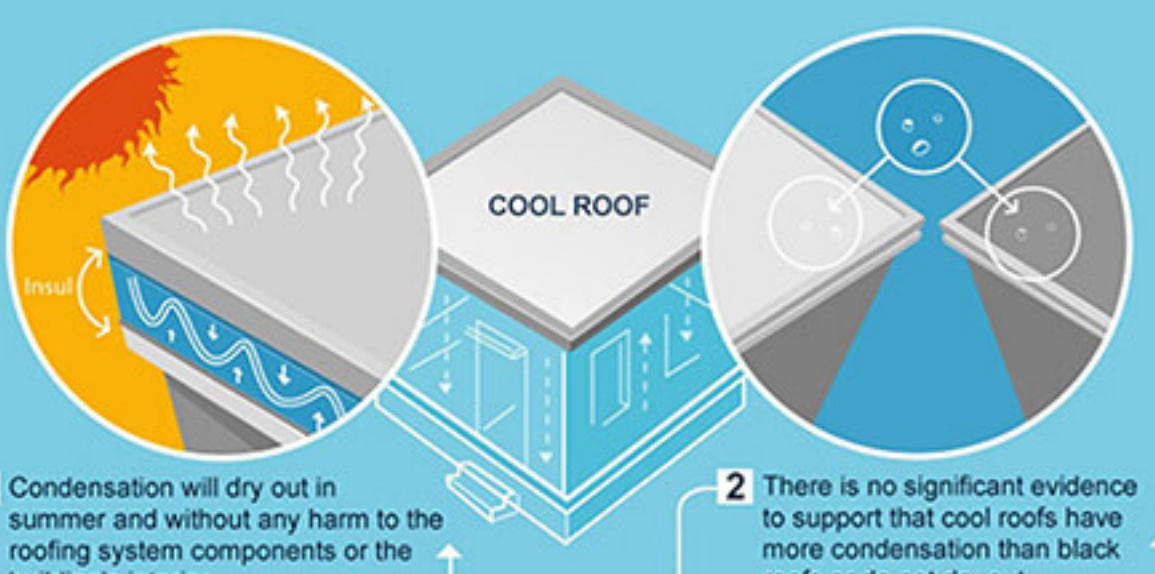
1. All surfaces outside are subject to getting dirty. However, a review of 448 low slope cool roof samples shows that 90% of these products still retain good reflectivity after three years.
2. Plus, roof cleaning can restore practically 100% of initial reflectivity for many products.

Myth 4

Cool roofs are prone to unusual levels of condensation within the roofing system which does not dry out.

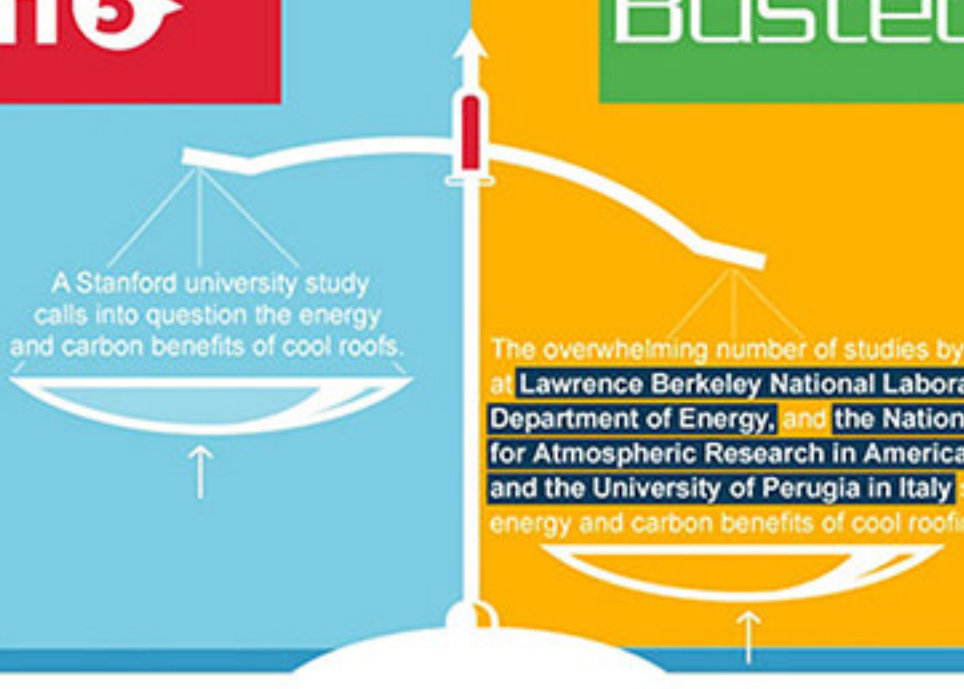
Busted

All low slope roofs installed without a vapor barrier in northern climates are subject to condensation in the roofing system.



1. Condensation will dry out in summer and without any harm to the roofing system components or the building's interior.
2. There is no significant evidence to support that cool roofs have more condensation than black roofs or do not dry out.

Myth 5



Busted

CONCLUSION

Cool roof myths don't stand up to the facts! Cool roofs are a proven strategy to reduce building energy costs, greenhouse gas emissions and the urban heat island effect.

Produced by

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