

The Path to a Greener Roof

Duro-Last® and NSF/ANSI 347

The roof is a huge part of any building project, and as the imperative for "greener" buildings grows, there is greater pressure to find an environmentally sustainable roof. But sustainability for membrane roofs had never previously been quantified.

IN THE PAST

The focus was on one or more of several individual attributes:

- Volatile Organic Compounds (VOCs) released by the material or its installation
 - Energy savings of the roofing system
 - Recyclability of the raw material
- But there was no objective composite score.

Duro-Last did well in all three areas. But there was no way to compile "points" for a full, fair comparison to other products!

Product Manufacturing

During the manufacturing process, the maker practices:

- Conservation of energy
- Conservation of water
- Protection of clean air
- Material waste reduction processes

Recycling Manufacturing Scrap

Duro-Last recycles material in three ways:

- Scrap is recycled back into production
- Leftover material is reground to produce resilient commercial flooring
- Pieces of off-spec membrane are used to make prefabricated roof accessories

Product Design

The membrane is made from environmentally sustainable raw material:

- Minimal chemicals of concern
- Informed selection of suppliers
- Reclaims post-consumer single-ply roofing membrane

Innovation

Has the company introduced new technology, or added sustainability value to old technology? Points awarded for:

- Increasing environmentally sustainable content
- Reduction of energy consumption
- Investment of capital in renewable energy at manufacturing plant
- Reduced water consumption and minimization of waste materials

Membrane Durability

How long will it last?
The roof's service life is a key factor.
It is measured by:

- Quality control measures
- Demonstrated durability in the field
- How much the material itself contributes to durability

For true sustainability, service life in the field is key. Two quality control measures must be in place:

- Documented installer training program
- Post-inspection protocol

NSF/ANSI 347

New standard developed by major standards organizations (NSF, ANSI) with roofing industry stakeholders:

- Architects
- Roofing consultants
- Engineers
- Non-government organizations
- Manufacturers

Based on total life cycle, NSF 347 quantifies and documents sustainable qualities of each membrane roofing material:

- Polyvinyl chloride (PVC)
- Thermoplastic polyolefin (TPO)
- Ethylene propylene diene terpolymer (EPDM)
- Ketone ethylene ester (KEE)
- Polyisobutylene (PIB) products

TOTAL LIFE CYCLE

From raw material to disposal, NSF 347 rates each product in five different areas:

Product design	42 points
Product manufacturing	27 points
Membrane durability	40 points
Corporate governance	7 points
Innovation	7 points
Total	123 points

Four levels of third-party verified certification:
conformant (lowest), silver, gold, platinum (highest)

Corporate Governance

Is the manufacturer responsible to its stakeholders?

- Training and outreach for installers and designers
- A good corporate citizen
- Good employer

Duro-Last's Community Commitment

- Duro-Last community investment credit
- Annual donation of roof to local church or school
- Donated roof for new teaching hospital
- Employees given opportunity to volunteer for Habitat for Humanity



Want to Learn More?

For more information about NSF/ANSI 347 and Duro-Last's certifications, visit duro-last.com/sustainability or contact us at 866-735-8824.

