WINDOW FILM IN
HOSPITALITY APPLICATIONS

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WHAT IS WINDOW FILM?

Definition

- Window Film is a thin layer of polyester film with transparent layers of metallic coatings or nano-ceramic particles.

- The metals or nano-ceramic layers reflect or absorb solar heat, significantly reducing solar heat gain into the building.

- The film is protected with a durable, optically-clear, scratch-resistant coating.

- Film is professionally installed as a retrofit product on almost any type of glass.

- Typical warranties are 10-15 years.
Reasons for installing film in a hotel

- Guest Comfort
- Reduce Heat Build-Up in Summer
- Reduce Glare
- UV Protection – reduce fading of drapes, carpets, furnishings
- Improve hotel’s exterior appeal
- Energy Savings (typical annual savings of 5-10% in total energy bills, with ROI often in 2-5 years)
- Utility rebates offered in most states (customized rebates)
  - Typically pays for 15-50% of project costs
Improving Guest Comfort

Daytime summer temperatures near windows ~30 deg F cooler with film
Types of Films

- **Solar-Control**
  - Typical costs $5-$7/sqft of glass
  - Often applied to all exposures for uniformity of appearance, but sometimes applied only to “non-North” exposures or to a particularly “bad” exposure

- **Low-E**
  - Typical costs $6-$8/sqft of glass
  - Usually applied to all exposures

- **Protective (Safety/Security)**
- **Anti-Graffiti**
- **Decorative**
Case Study

Goals of Project:
• Improve Guest Comfort (Room temps near 78 deg F in summer)
• Provide good ROI from energy savings

Results:
• Room temps now comfortable
• Cost $75,000
• Savings $24,000
• ROI 3.1 years

Marriott Winston-Salem, NC
Goals of Project:

• Guest comfort issues due to undersized HVAC System
• Avoid costly (> $1 million) HVAC retrofit
• Reduce excessive heat and glare

• ALL goals achieved, with an added ROI from energy savings
Case Study

ADAM’S MARK (now a SHERATON), DALLAS, TEXAS

Goals of Project:
• Alternative to costly replacement of existing windows
• Create high performance glazing
• Reduce energy costs
• Improve guest comfort
• Improve exterior appeal
Solution:

- High Performance Window Film
  Rejects 78% of solar heat

- Approximate installed cost $1 million
  - Very large film project – most hotel projects $50k-250k
  - Compared to $5-$7 million for new windows

- Simple Payback: approx 2 years was also eligible for utility rebate (approx $200k)
DETERMINE ENERGY SAVINGS

Energy Analysis

Using DOE-2 or EnergyPlus programs that show film:

• Kilowatt-hour savings by month
• Kilowatt demand reduction
• Heating fuel savings (using low-e films)
• Projected Annual Energy Savings in Dollars
• Projected Return on Investment in Years

• Usually these Energy Audits are accepted & used by local utilities for rebate applications
Window films – can assist in various areas with LEED Certification

- Optimizing Energy Performance
- Improving Guest Comfort
- Improving Daylighting and Views
- Light Pollution Reduction
- Innovations in Operations & Upgrades
  - Upgrade windows to safety glass
- Optimize Use of Alternative Materials
  - Projects within 500 mi of mfg
LOW-E FILMS

Definition

• Similar to solar-control only films in that they reduce solar heat gain to:
  - Increase guest comfort
  - Reduce glare
  - Enhance the exterior appearance of building
  - Reduce fading of interiors

• Low-e films also reduce radiant heat loss in winter and improve window insulating performance
Winter Performance

EnerLogic low-e window film is an almost perfect reflector of Near-IR heat, reflecting this heat back into the room, preventing 93% of this heat from escaping – helping to lower heating costs.
Winter Performance

Window with EnerLogic low-e window film is substantially cooler on the exterior, demonstrating less of the home’s heat being lost through the window.
LOW-E FILMS

Upgrading Window Insulating Performance

• Single-pane windows plus some types of low-e films provides dual-pane performance

• Dual-pane windows plus some types of low-e films provides triple pane performance
Hyatt Regency Houston Case Study

Film installation in July 2012  EnerLogic VEP35 Film
SW and SE sides only, film not applied to NE exposure
Energy savings measured by third-party, Green Generation Solutions

Savings: $32,000/yr
23% savings on cooling  25% savings on heating
ROI 3.6 years (including $35k utility rebate)
Summer Performance

No film – Glass warmed by sun’s heat radiating heat into room

Hyatt Regency Houston window and room configuration

With EnerLogic – Warm glass, **but with almost no heat radiating into room**
During the period below, for the Hyatt Regency Houston, EnerLogic provided a 22.4% savings in summer cooling kwh.
Winter Performance

During the period below, for the Hyatt Regency Houston, EnerLogic provided a 27.8% savings in heating kWh.

Winter kWh Comparison – December 20, 2012 to January 17, 2013

- The chart below compares measured energy use from 12/20 to 1/17 across all unfilmed and filmed floors.
- The filmed floors consumed 27.8% less energy than the unfilmed floors for the winter period.
ABOUT THE PRODUCT

Care and Maintenance

- Most installations should be allowed to cure for 7 to 30 days.
- Non-abrasive window cleaners may be used once the film is cured.
- With a little care, the film’s scratch-resistant coating will offer years of durability – many installations in use for 10-20 years.
Are There Any Questions?

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