Combining Saflex® Solar and robust solar control coatings for optimal performance

Featuring Saflex Solar PVB Interlayers
Solar control in buildings

- Balancing daylight and transparency with heating- and cooling requirements – minimizing energy while maintaining comfort

- Many elements affect this in a building, from macroscopic factors to design detail play a role
  - Climate, seasonal variations, building and façade orientation, building design, blinds, screens, print, frit, glass type, coatings

Amazon HQ, Milan, Italy, 2017
Saflex® Solar PVB interlayers

- Saflex Solar PVB interlayers are high-visible light transmittance, low IR-radiation transmittance interlayers
  - Much of the IR radiation is absorbed
  - Products are Saflex Solar SG (top performance) and Saflex Solar SH (neutral appearance) interlayers
Traditional application areas of Saflex Solar

- In curved glass
- In glass where low reflection is required
- In glass where metal layers present in coatings can interfere with electromagnetic signals
- To provide solar control in regions where advanced solar-control coatings are not widely available

- Use of solar PVB in many cases implies the use of strengthened glass to reduce risk of thermal breakage
Eastman model and coated glass studies

- Saflex Solar can improve the selectivity of stand-alone laminates in combination with robust solar control coatings
  - coatings provide reflection color, and overall light transmission
  - Saflex Solar provides selectivity
  - improved solar performance/g-value improved with coatings in either position #2 or #4
  - the most common case where this configuration occurs is in a double-skin façade

- Technical references are available
### Saflex Solar vs. Saflex Clear

<table>
<thead>
<tr>
<th>Coating</th>
<th>Glass type</th>
<th>Coating position</th>
<th>Interlayer</th>
<th>Visible light transmittance (%)</th>
<th>g-value</th>
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</thead>
<tbody>
<tr>
<td>Coating Supplier A</td>
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<td>Saflex Clear</td>
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<table>
<thead>
<tr>
<th>Saflex Solar SH</th>
<th>Saflex Solar SG</th>
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</thead>
</table>
Conclusions

- Saflex Solar PVB can be used to significantly improve the g-value of façades when used in combination with robust solar control coatings
  - The role of the coating is to provide a specific color and light transmission, and determine degree of reflectivity
  - The role of the interlayer is to provide selectivity

- The use of this type of combination is relatively new and other elements of the design need to be validated for the individual coating type, such as glass type choice, permanence of adhesion and other durability characteristics
Disclaimer
For More Information on Saflex® and Vanceva® interlayers:
www.eastman.com/saflex

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When properties of solar PVB are referenced they are determine on single samples of Saflex SG41 interlayer or Saflex SH41. Results are not guaranteed for all samples or for conditions other than those tested.
Glossary

- **Visible light transmittance**
  - Fraction of incident visible light that is transmitted

- **Energy or solar direct transmittance**
  - Fraction of incident radiation that is transmitted

- **g-value**
  - Sum of the solar direct transmittance and secondary heat transfer

- **Selectivity**
  - Visible light transmittance over g-value
  - Visible light carries energy as well!

- **Color rendering index**
  - Color change as a result of visible light transmitted by the glass

Relevant standards include EN 410, ISO 9050, NFRC 300