The Shepherd Color Company

Over 70 years’ experience

- Based in Cincinnati, Ohio, USA
- Established 1916
- Family Fourth Generation
Pigment Classification System

Colorants

Pigments

Dyes

Inorganic

Organic

Colored

White

Natural

Synthetic

Opaque

Non-opaque

Natural Colorants

Metallic pigments

Ultramarine blue

Luster

Bismuth

Carbon black

Metallic Oxides

Cadmiums

Chrome yellow

Molybdate orange

Iron blues

Metal Salts

Calcium Carbonate

Barium Sulfate

Mica

Silica

Talc

Clays

CICP

Spinel

Rutile

Other

Other

Titanium Dioxide

Zinc Oxide

Zinc Sulfide

Antimony Oxide

Cadmiums

Chrome yellow

Molybdate orange

Iron blues

Calcium Carbonate

Barium Sulfate

Mica

Silica

Talc

Clays
Markets Served

- Roofing granules
- Metal building products
- Vinyl siding, Windows, Doors
- Automotive
- Wood coatings
- Military
Attributes

- Heat Stable
- Weather Resistant
  - Samples placed at CA exposure sites
  - Offer to provide Accelerated weathering time
- Chemical Resistance
- Acid Rain & Salt Spray Resistant
- Compatibility
Concrete and Clay Tile and Painted Metals under exposure

Clay and Painted Metal exposed for 1½ years
Concrete Samples Exposed in Sacramento, CA.

Exposure Time (yrs)

Solar Reflectance (p)

Blue Arctic  Red Arctic  Brown Arctic  Black Arctic  Gray Arctic
“Cool” Activities

• Associations
  – NCCA
  – CMRC
  – PAC

• Tradeshows
  – NRCA, WSRCA
  – Metalcon, ICE
  – CSI
  – NPE, ANTEC, VSI
Market Education

• Publications

• Literature

The Chemistry Behind ‘Cool Roofs’
Color Choice

• Even with IR technology, increasing reflectivity requirements reduce effective color envelope.

Reflectivity Requirement

TSR

Obtainable Roofing Colors
Shepherd: View of Future

Research Direction: Market Focus

- Cooperate with LBNL, ORNL, Industry to improve reflectance of roofing materials
- Things that work and are durable
  - darker colors / higher TSR
- Increasing reflectance to 40% - number of color choices drops considerably
- Shepherd active R&D to push pigment technologies; Darker, Jetter, Higher TSR
- Overcoming inertia of downstream customers
- Continue to exhibit / promote “Arctic” cool technologies