

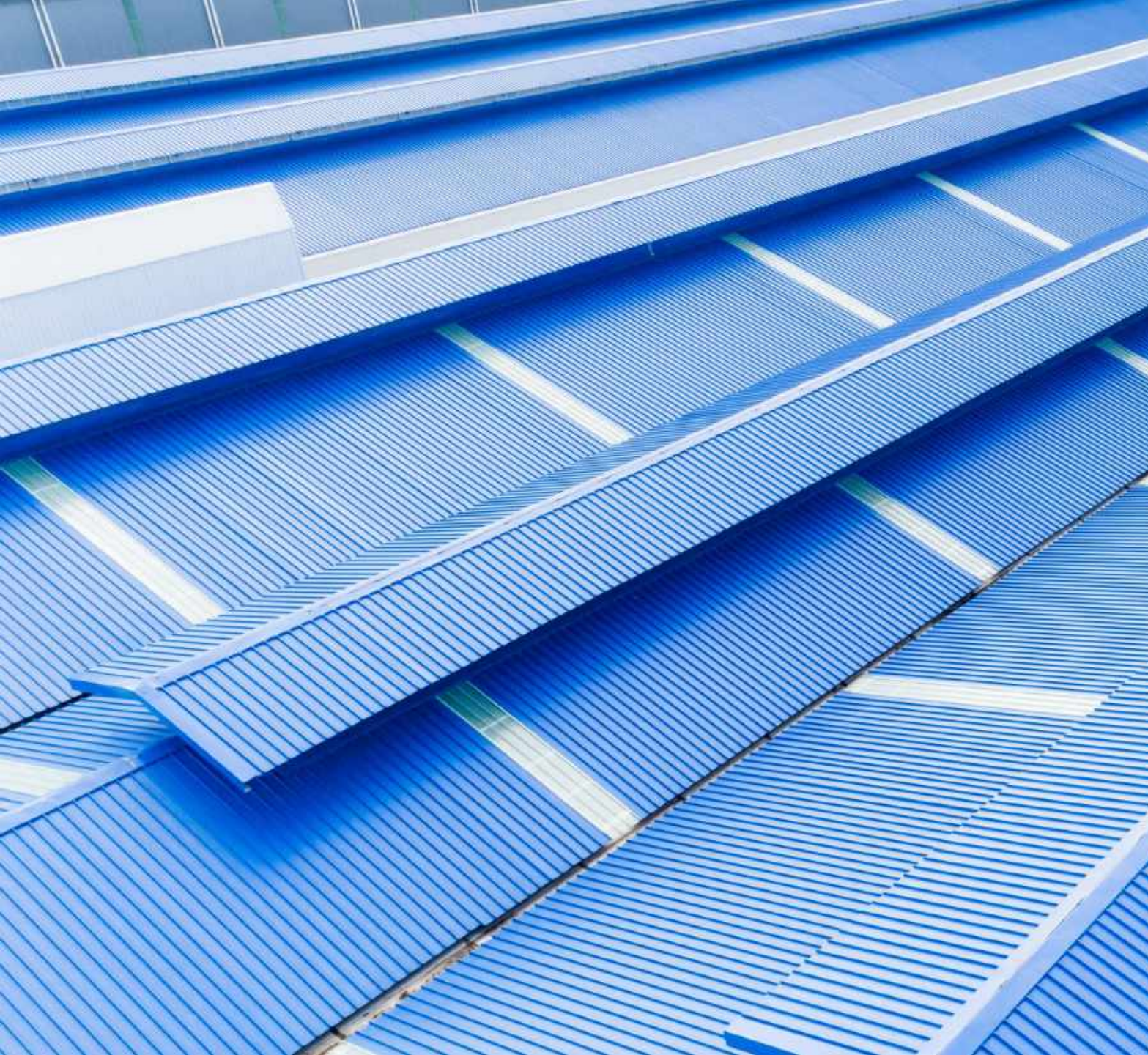


steel
CONNECT

STEEL FINISHES & FUNCTIONALITY FOR BUILDING ENVELOPE

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**STEEL AS
PREFERRED
BUILDING
ENVELOPE
FOR
FACTORIES**



WAREHOUSES



INFRASTRUCTURE



COMMERCIAL



RESIDENTIAL



BOLD BUILDING DESIGNS



BOLD BUILDING DESIGNS



BOLD BUILDING DESIGNS



ORGANIC BUILDING ENVELOPES



1

PROTECTIVE FUNCTION

① PROTECTIVE FUNCTION

NOT DURABLE



① PROTECTIVE FUNCTION

**REQUIRES
REPLACEMENT**

① PROTECTIVE FUNCTION

**MORE COSTLY
FOR THE
RURAL /
POOR**



FINISHING LAYER

PRIMER LAYER

**METALLIC ALLOY
LAYER**

STEEL

**LAYERS OF
PROTECTION
ON STEEL**

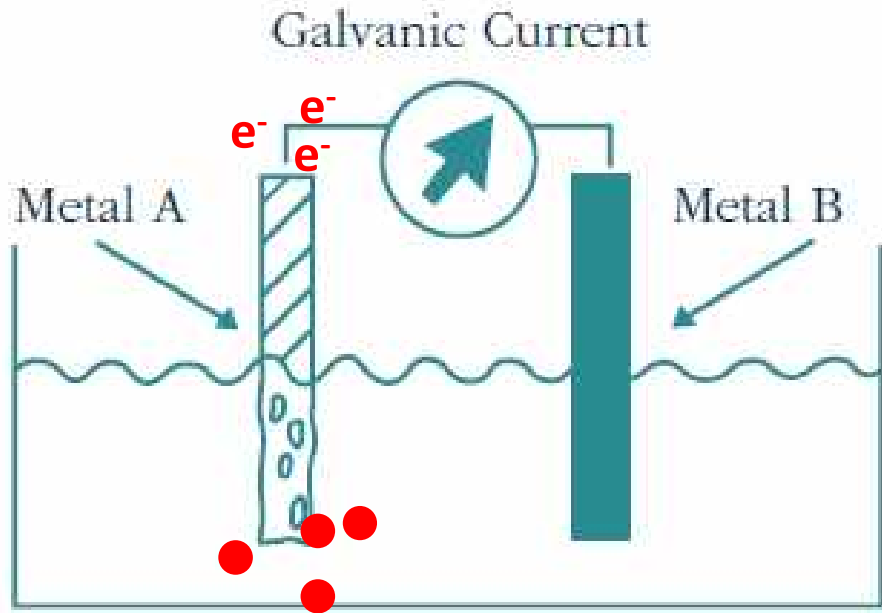
FINISHING LAYER

PRIMER LAYER

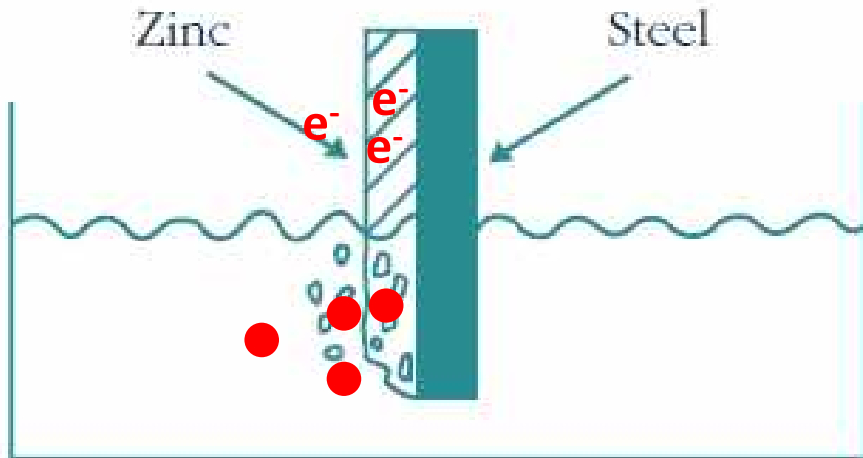
**METALLIC ALLOY
LAYER**

STEEL

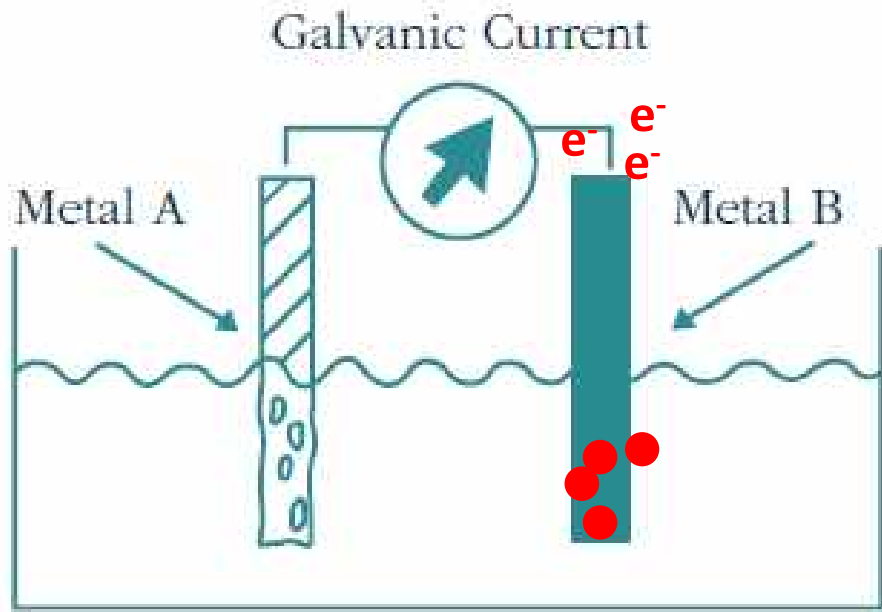
**PROTECTIVE
METALLIC
ALLOY LAYER**



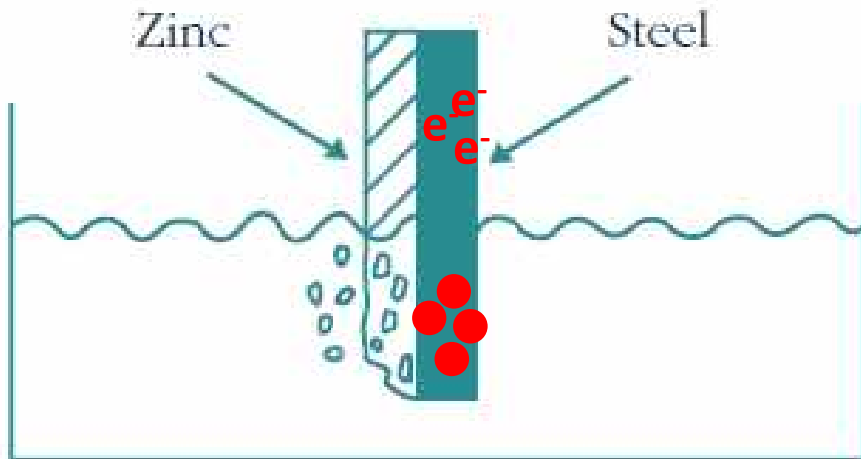
GALVANIZED STEEL



HOW METALLIC ALLOY LAYER PROTECTS STEEL?

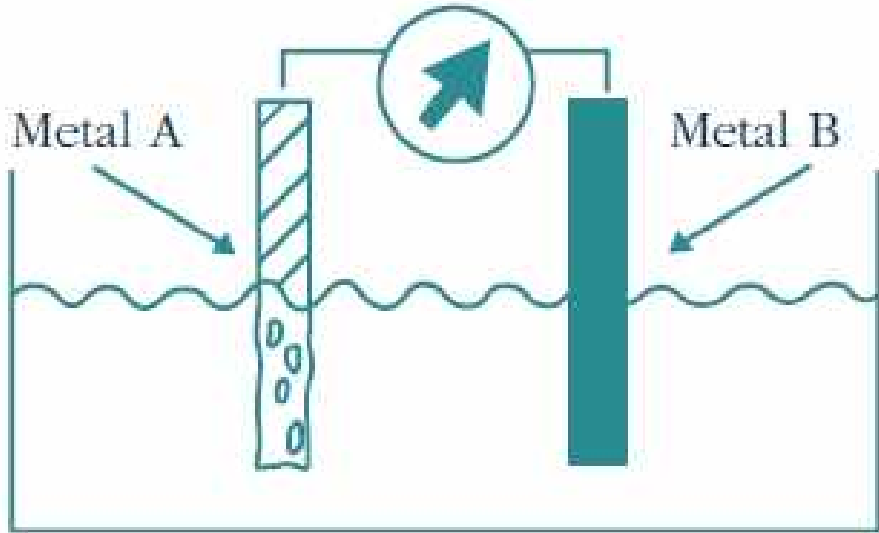


GALVANIZED STEEL

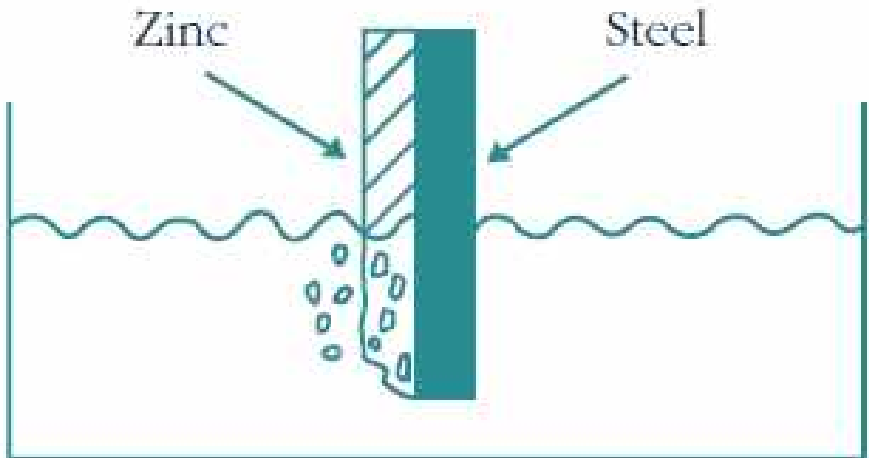


HOW METALLIC ALLOY LAYER PROTECTS STEEL?

Galvanic Current



GALVANIZED STEEL

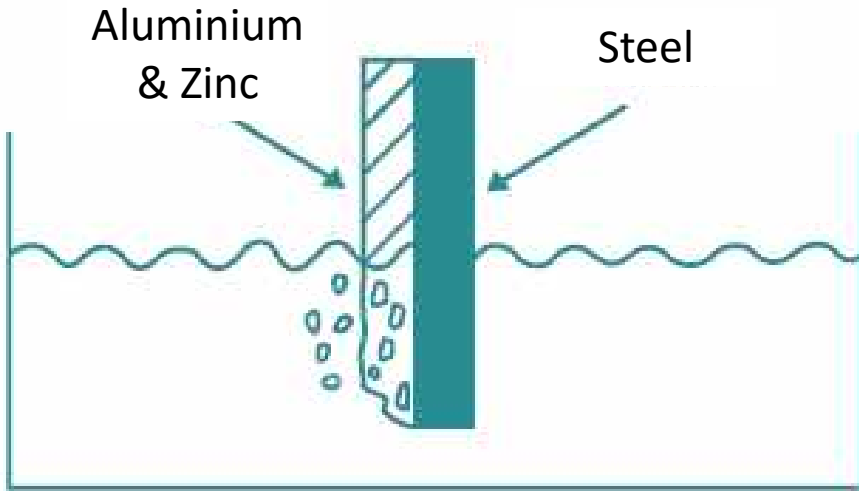


NOBLE (CATHODIC)	
	Gold
	Platinum
	Titanium
	Graphite
	Silver
PASSIVE	Stainless Type 316
	Stainless Type 310
	Stainless Type 304
	Stainless Type 302
	Stainless Type 430
	Stainless Type 410
PASSIVE	80% Ni 15% Cr
	Inconel
	60% Ni 15% Cr
	Nickel
	Monel
	Copper-Nickel
	Bronzes
	Copper
	Brasses
ACTIVE	80% Ni 20% Cr
	Inconel
	60% Ni 15% Cr
	Nickel
	Tin
	Lead
ACTIVE	Stainless Type 316
	Stainless Type 310
	Stainless Type 304
	Stainless Type 302
	Stainless Type 430
	Stainless Type 410
	Cast Iron
	Carbon Steel
	Cadmium
	Aluminium
	Zinc
	Magnesium Alloys
	Magnesium
ACTIVE (ANODIC)	

1 PROTECTIVE FUNCTION

HOW METALLIC ALLOY LAYER PROTECTS STEEL?

GALVANIZED STEEL



1 PROTECTIVE FUNCTION

HOW METALLIC ALLOY LAYER PROTECTS STEEL?

	NOBLE (CATHODIC)
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	Titanium
	Graphite
	Silver
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	Stainless Type 310
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	Stainless Type 410
	Cast Iron
	Carbon Steel
	Cadmium
	Aluminium
	Zinc
	Magnesium Alloys
	Magnesium
	ACTIVE (ANODIC)



TYPE
"AZ"



TYPE
"Z"

**VARIES IN
LEVEL OF
METALLIC
ALLOY
PROTECTION**

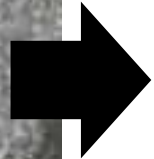


TYPE
"AZ"



TYPE
"Z"

**VARIES IN
LEVEL OF
METALLIC
ALLOY
PROTECTION**



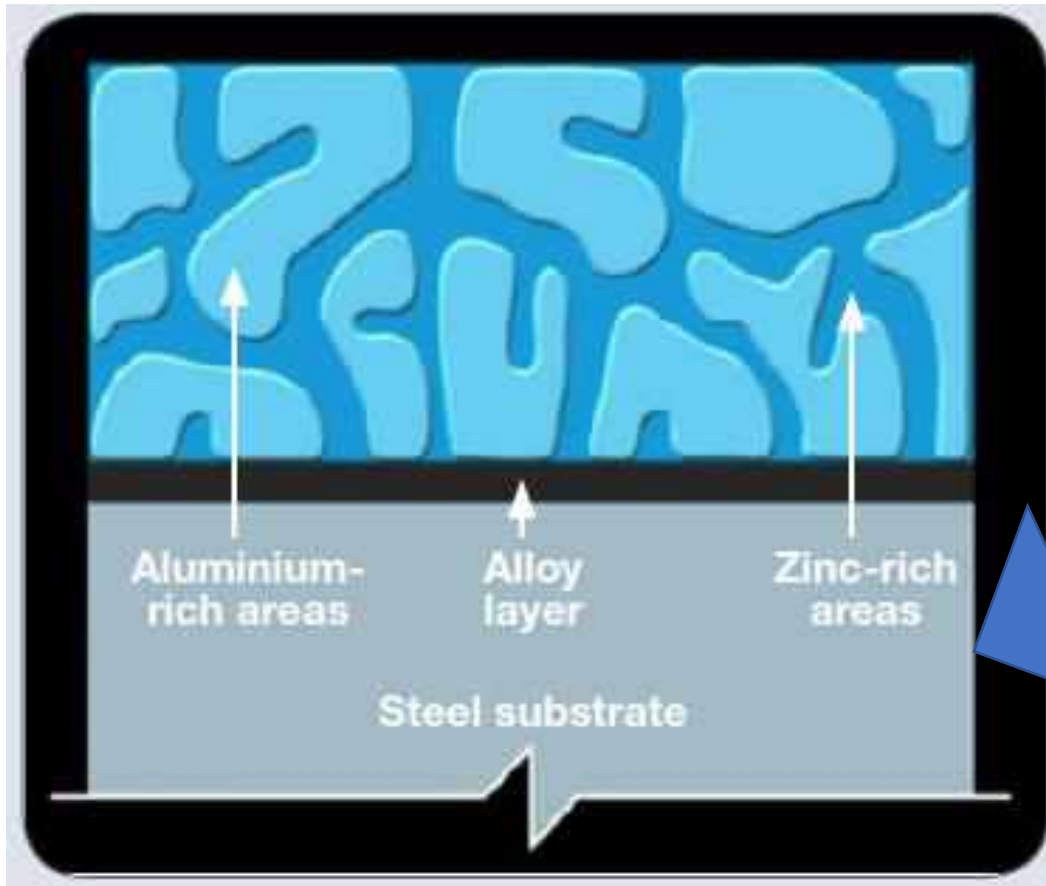
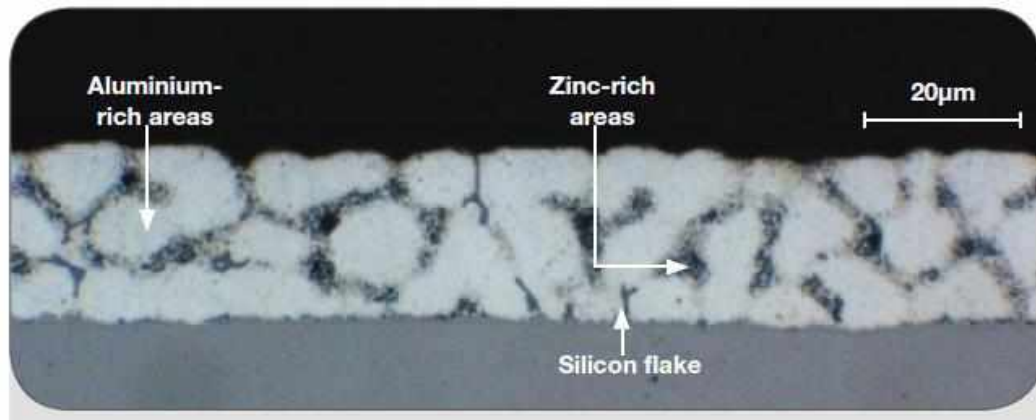
TYPE
"AZ"



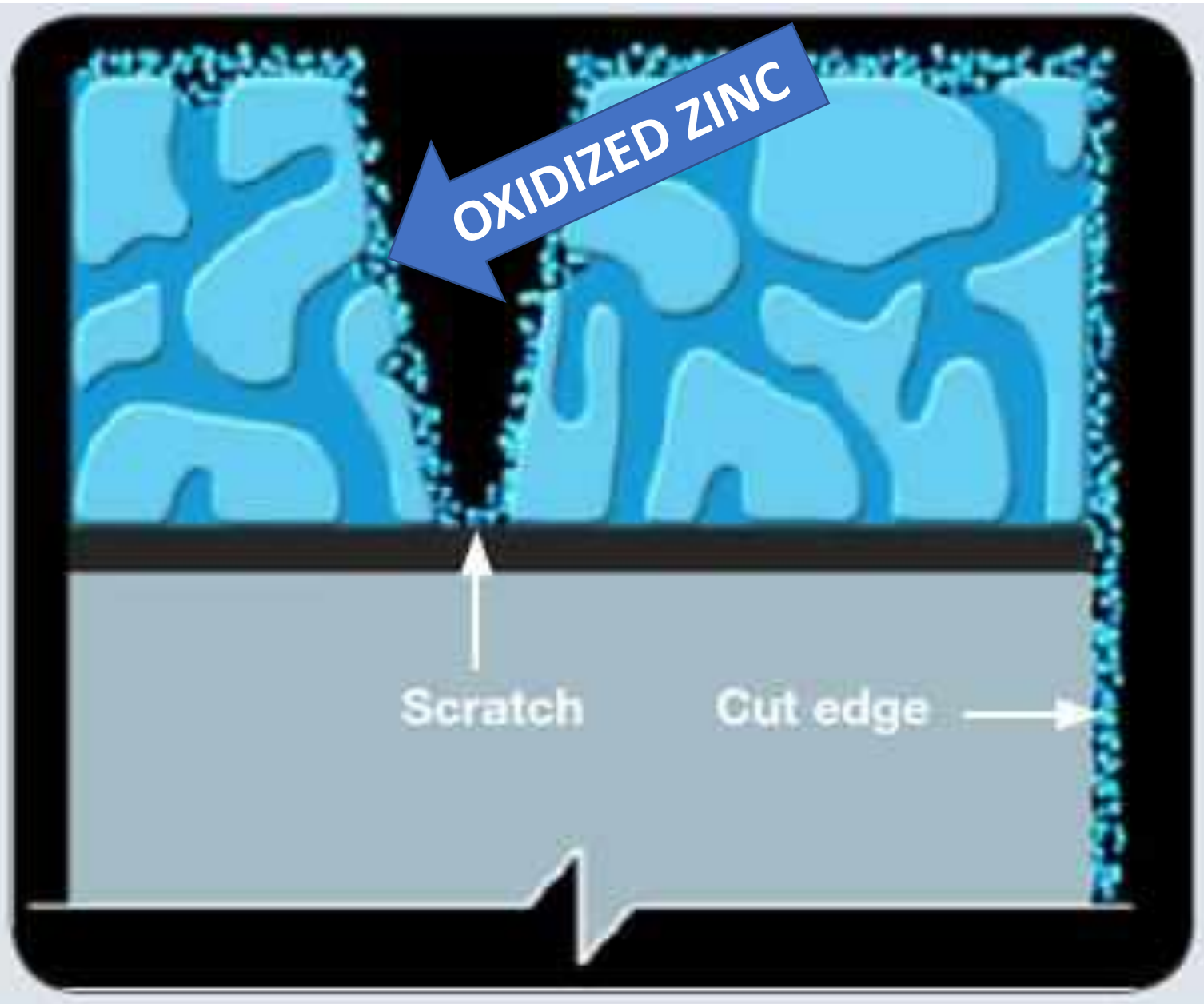
TYPE
"Z"

VARIES IN
LEVEL OF
METALLIC
ALLOY
PROTECTION

1 PROTECTIVE FUNCTION

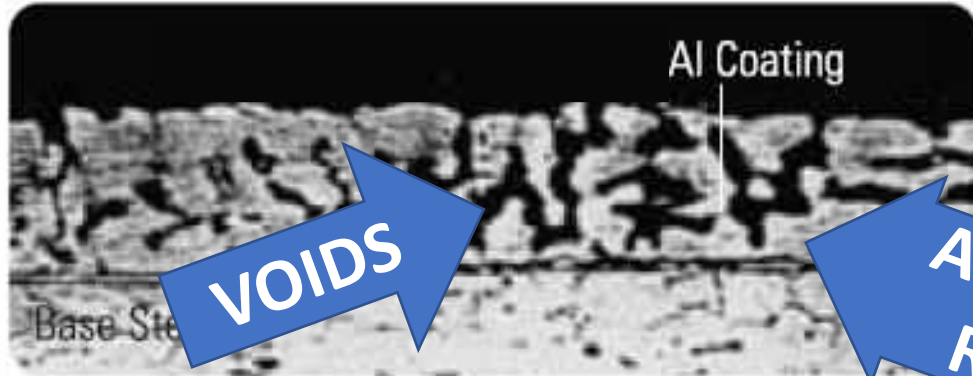


METALLIC ALLOY LAYER TYPE "AZ"



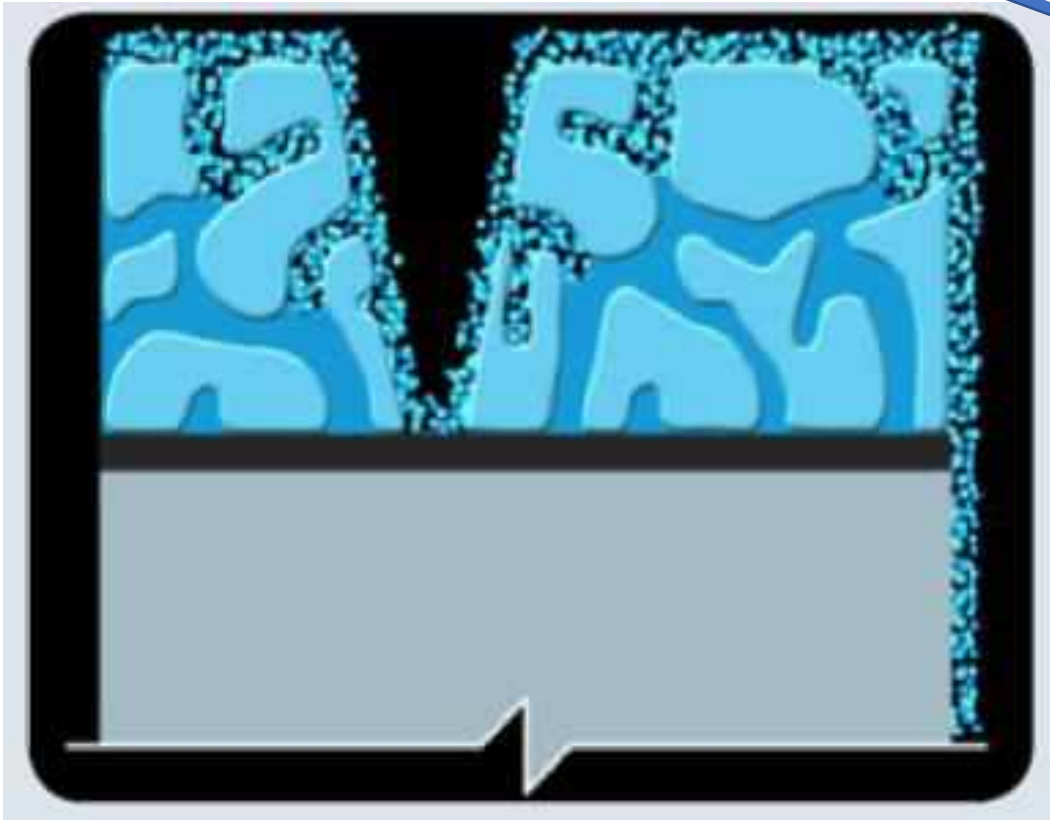
METALLIC ALLOY LAYER TYPE "AZ"

① PROTECTIVE FUNCTION



VOIDS

ALUMINIUM
REMAINS



METALLIC
ALLOY LAYER
TYPE "AZ"



① PROTECTIVE FUNCTION

PROTECTIVE ORGANIC COATING

FINISHING LAYER

PRIMER LAYER

**METALLIC ALLOY
LAYER**

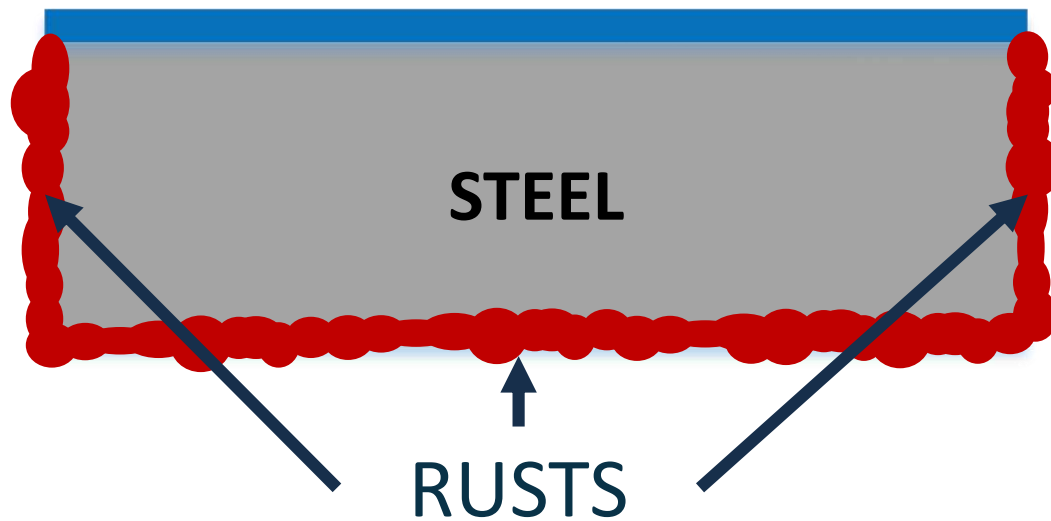
STEEL

**ORGANIC
COATING**

FULLY COVERED



NOT FULLY COVERED



HOW
ORGANIC
COATING
PROTECTS
STEEL?



②

AESTHETIC FUNCTIONALITY





2 AESTHETIC FUNCTION

**MANY TYPES
OF FINISHES**



② AESTHETIC FUNCTION

COLOURFUL

PIGMENTS





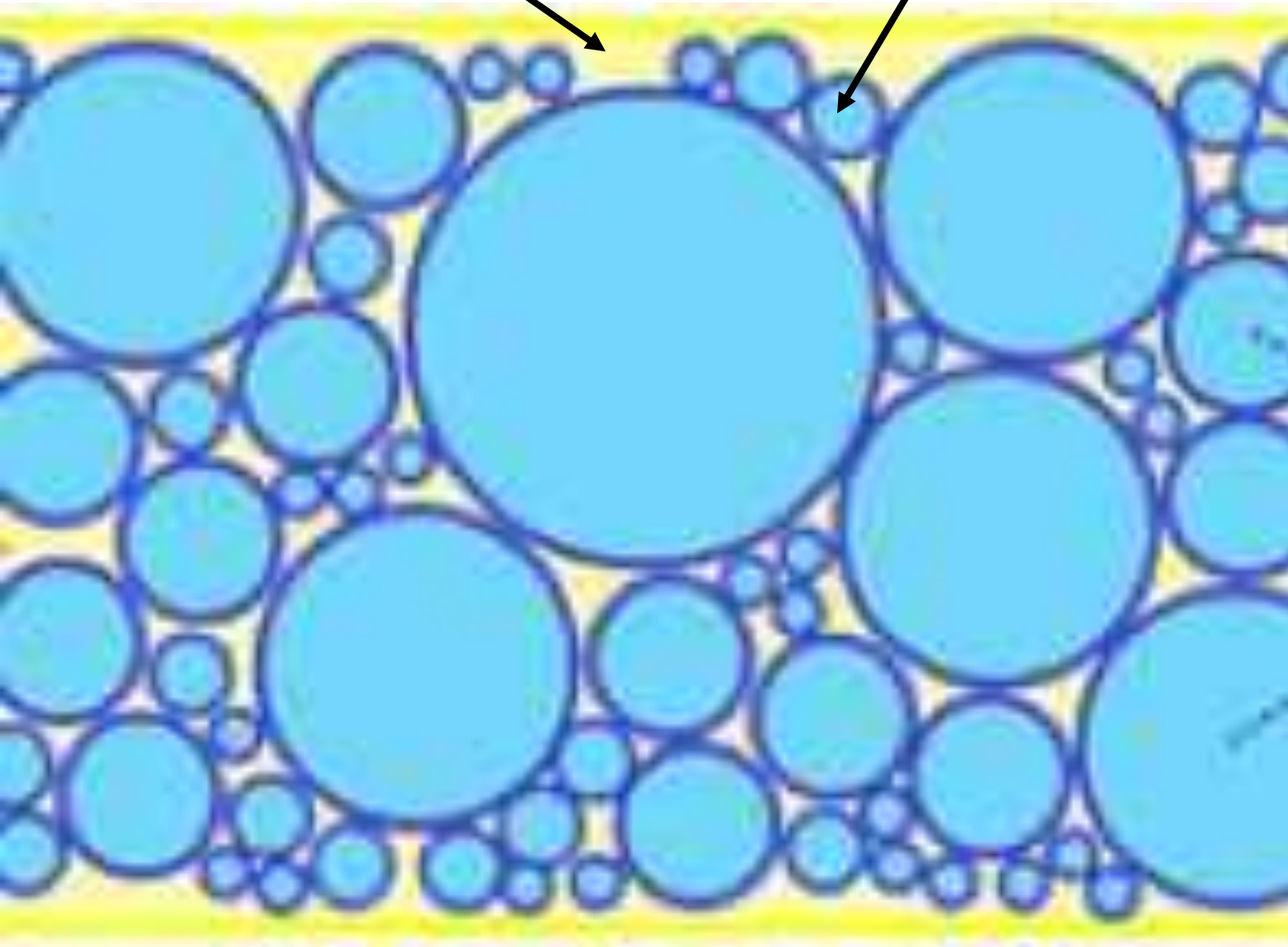
2

AESTHETIC FUNCTION

RESINS

RESIN

PIGMENTS



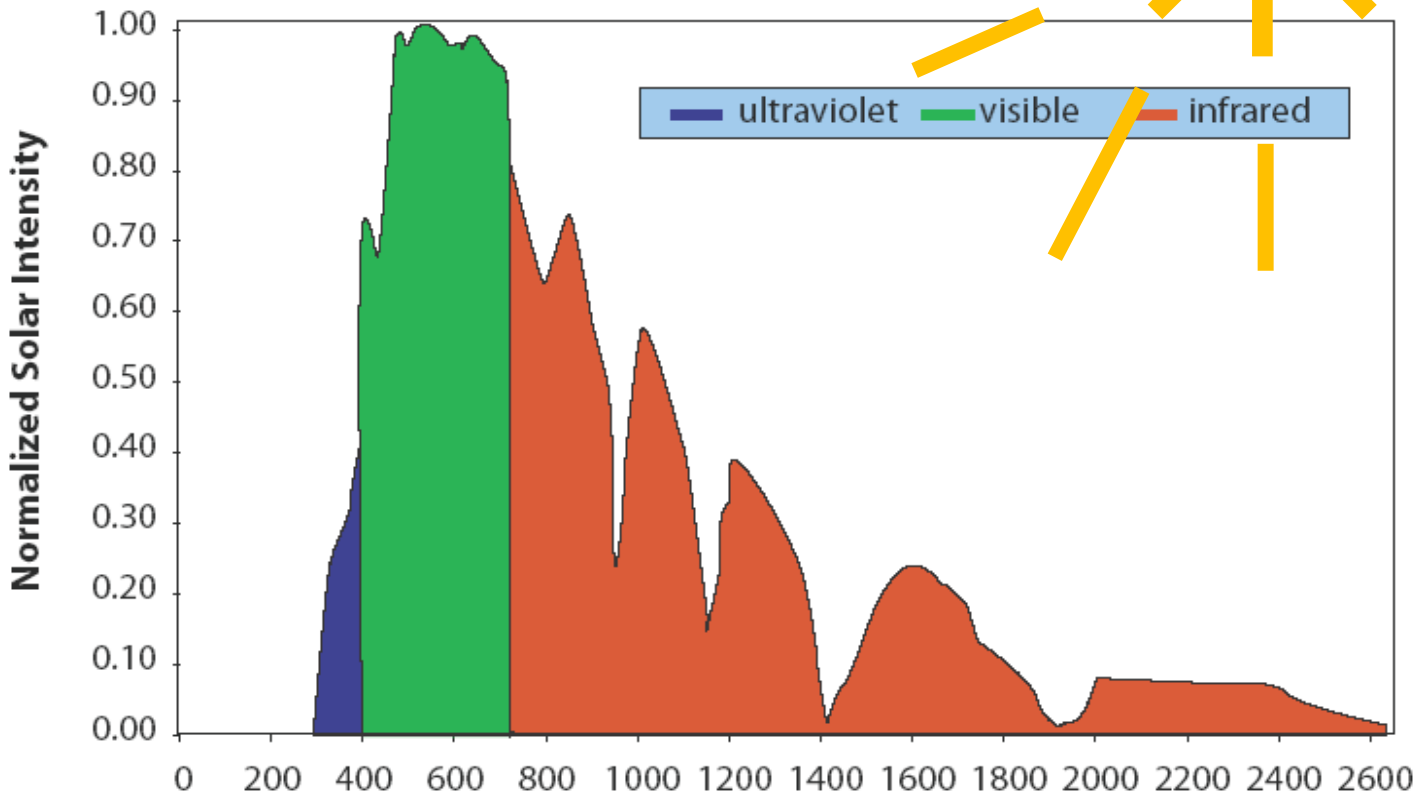
2 AESTHETIC FUNCTION

PIGMENTS & RESINS

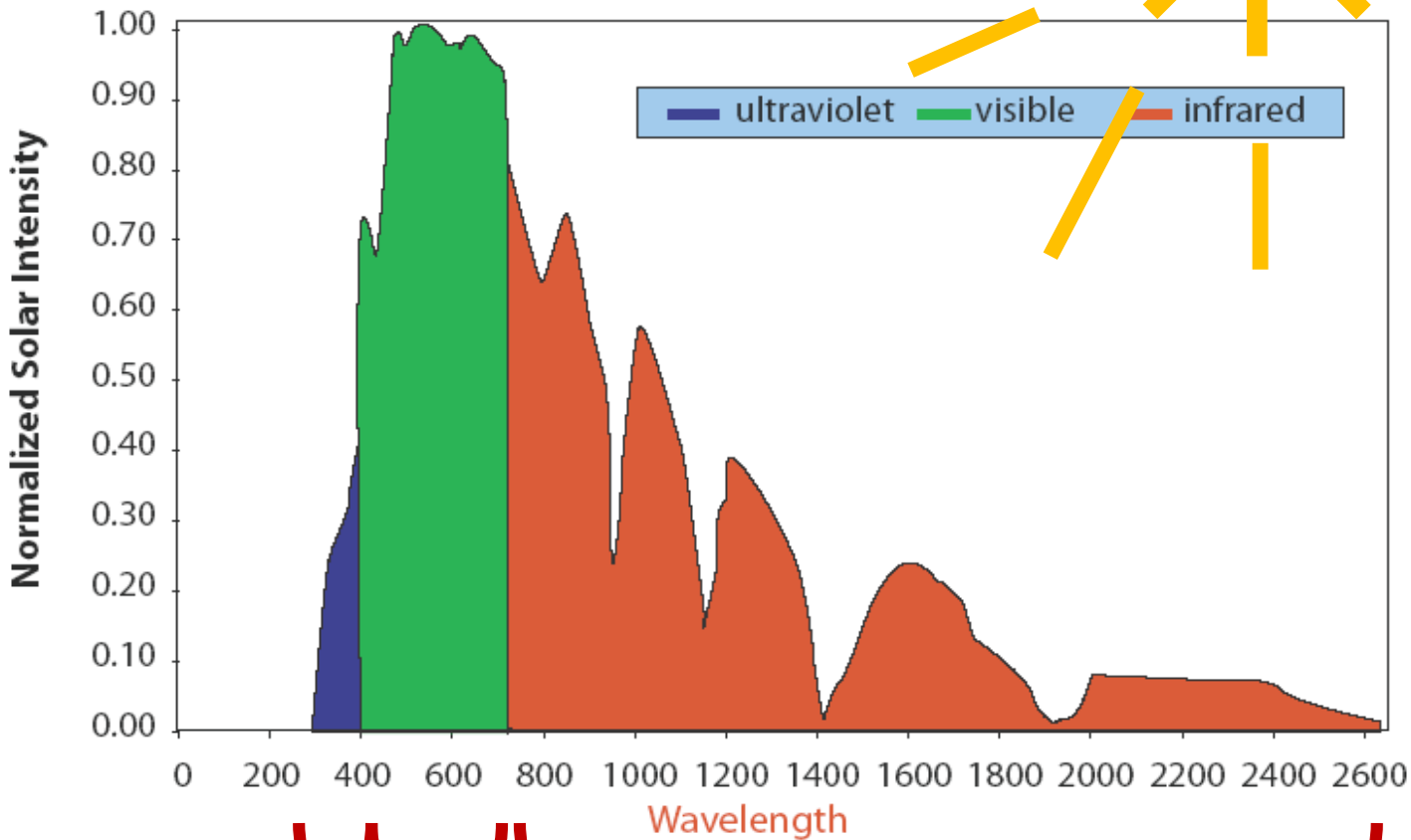


② AESTHETIC FUNCTION

BASICS OF SUNLIGHT

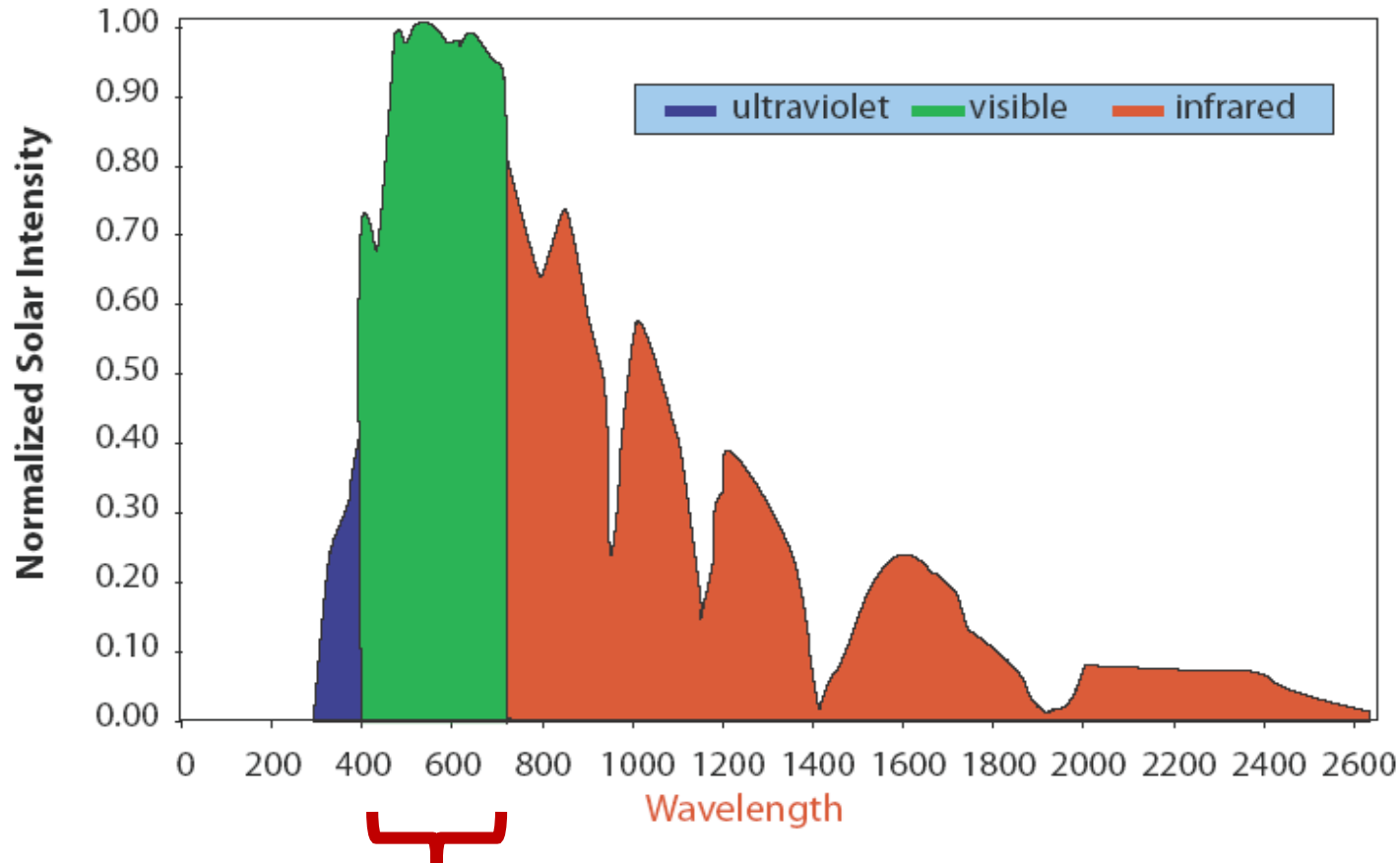


SUNLIGHT SPECTRUM



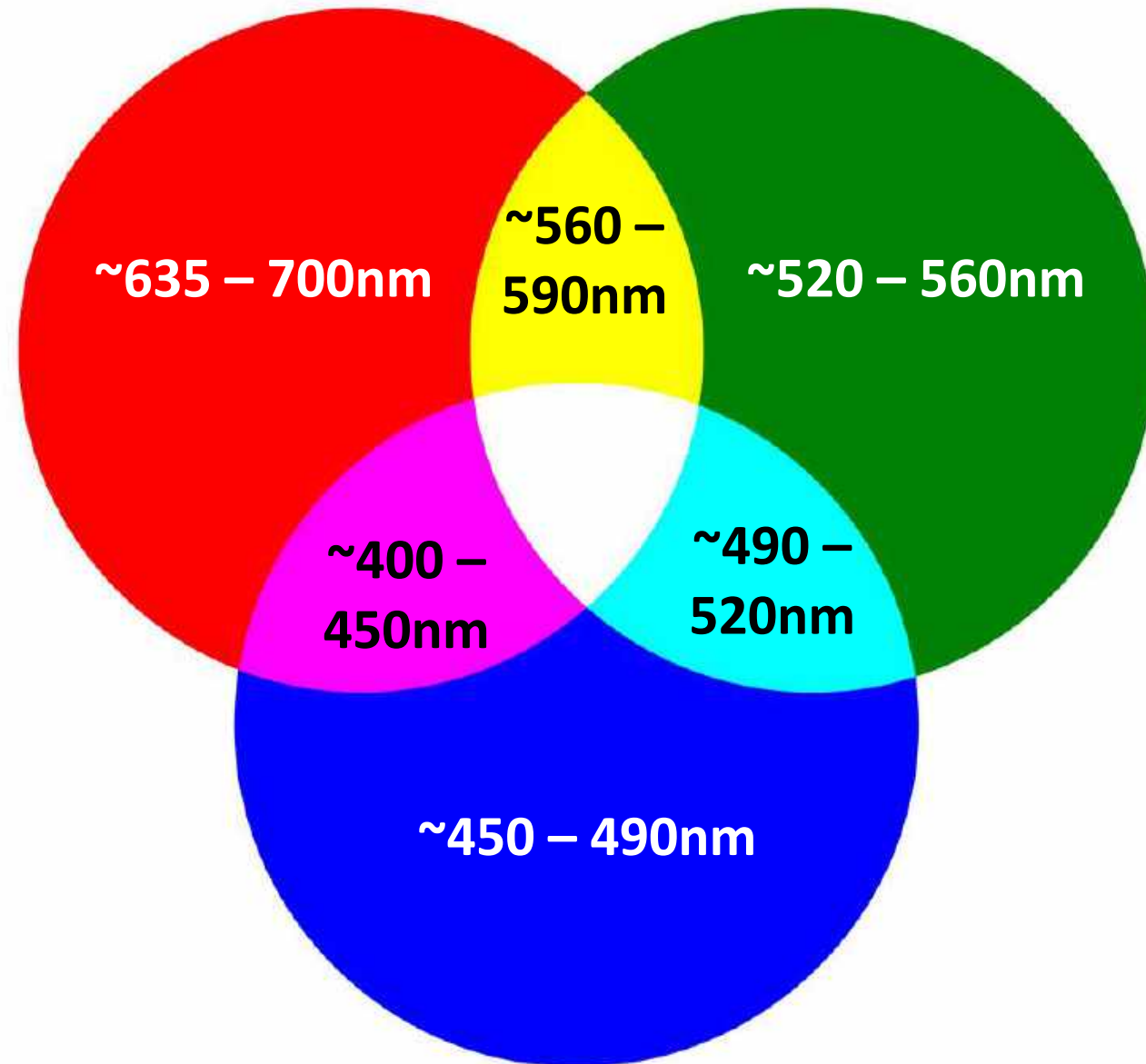
SUNLIGHT SPECTRUM

VISIBLE
ULTRAVIOLET (NOT VISIBLE)
INFRARED (NOT VISIBLE)

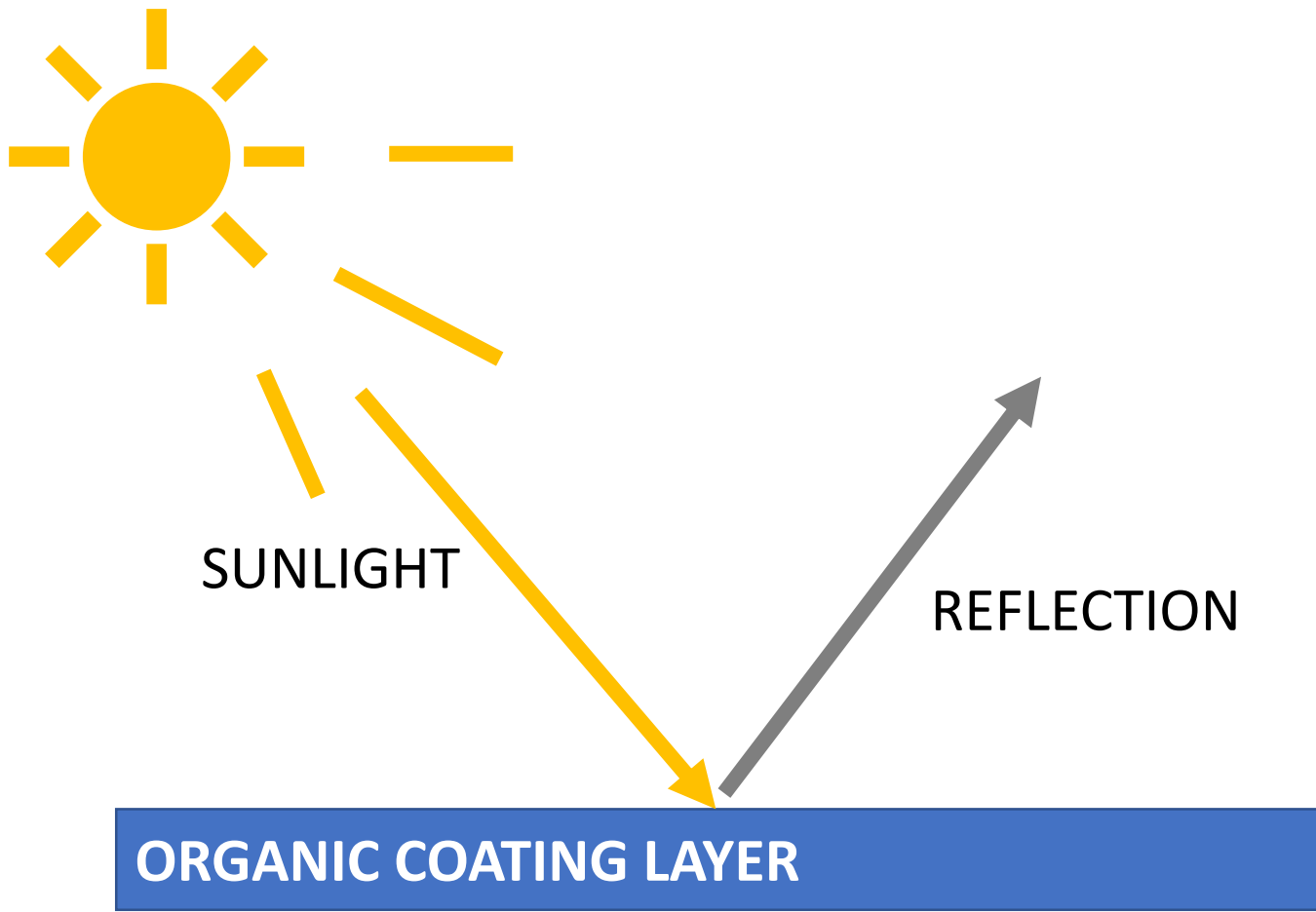


VISIBLE

**VISIBLE
WAVELENGTH
400 – 700
NANOMETERS**



BASIC COLOUR SPECTRUM R.G.B.



② AESTHETIC FUNCTION

**APPEARANCE
AFFECTED BY
HOW LIGHT IS
REFLECTED**



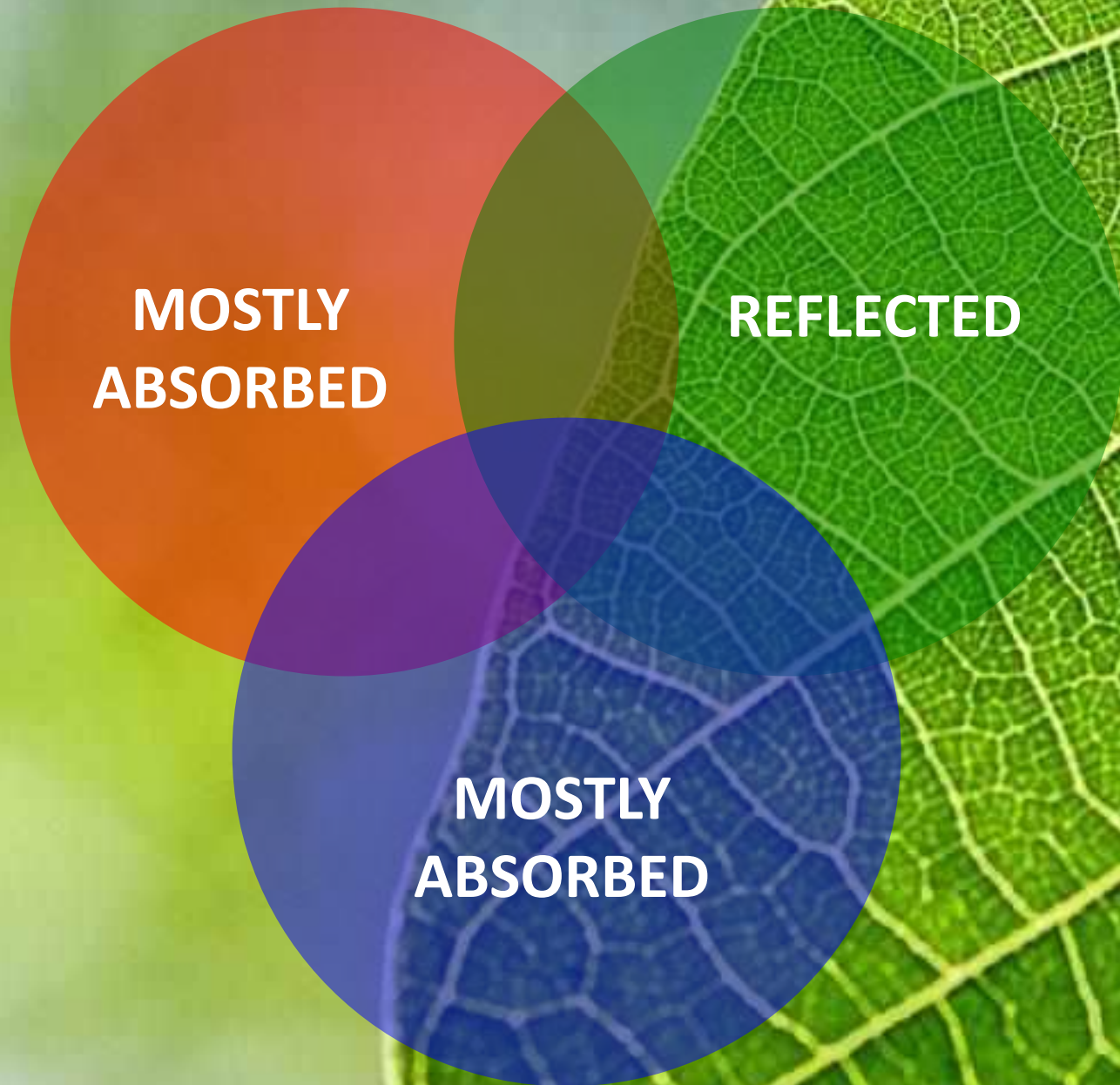
② AESTHETIC FUNCTION

REFLECTION

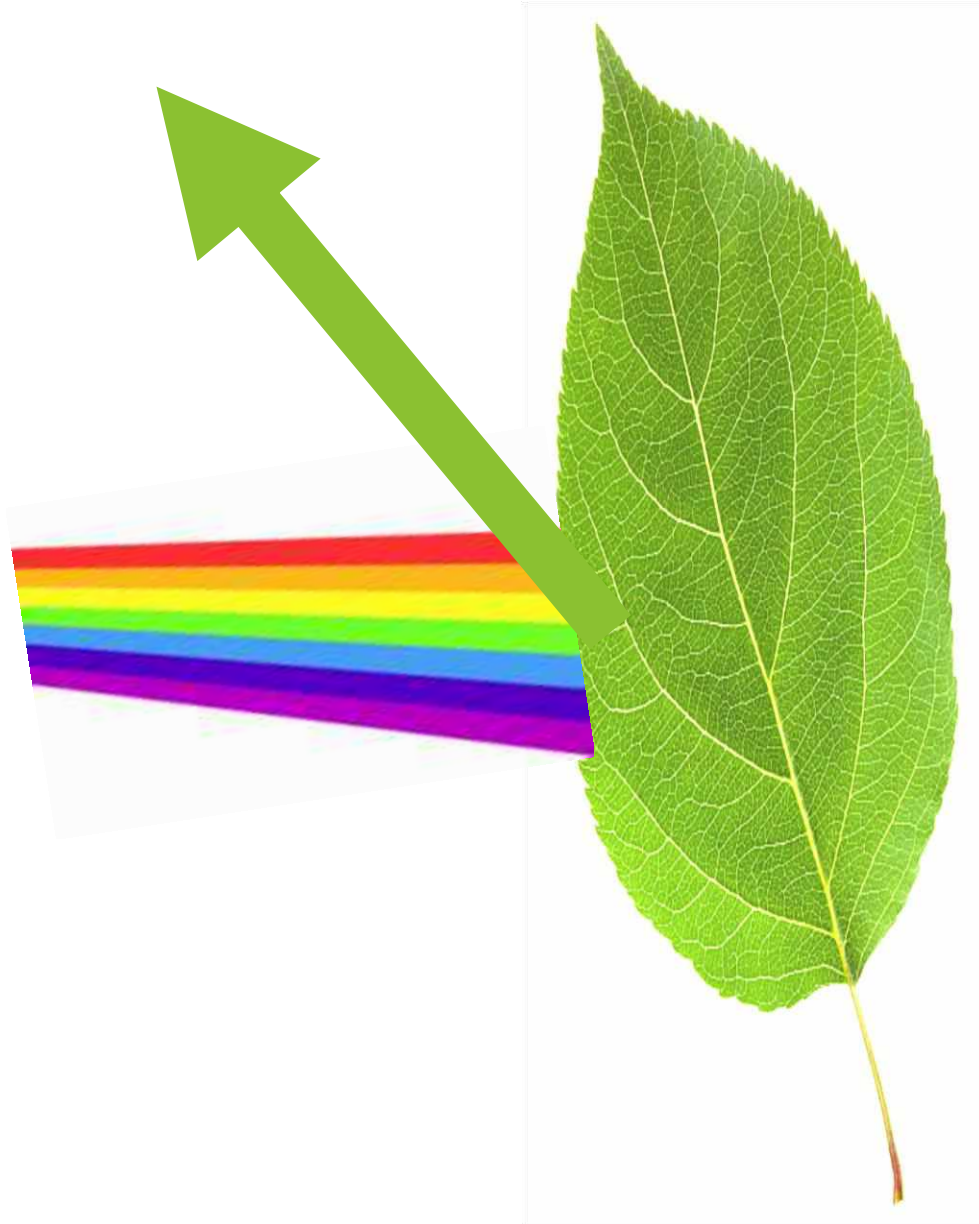
A close-up photograph of a green leaf, showing the intricate network of veins. The leaf is split vertically: the left side is brightly lit, showing vibrant green and clear vein details, while the right side is in deep shadow, appearing dark green and less detailed. The text is overlaid on the right side.

② AESTHETIC FUNCTION

**GREEN
COLOUR**



**CHROLOPHYLL
ABSORBED
RED AND BLUE
SPECTRUMS**



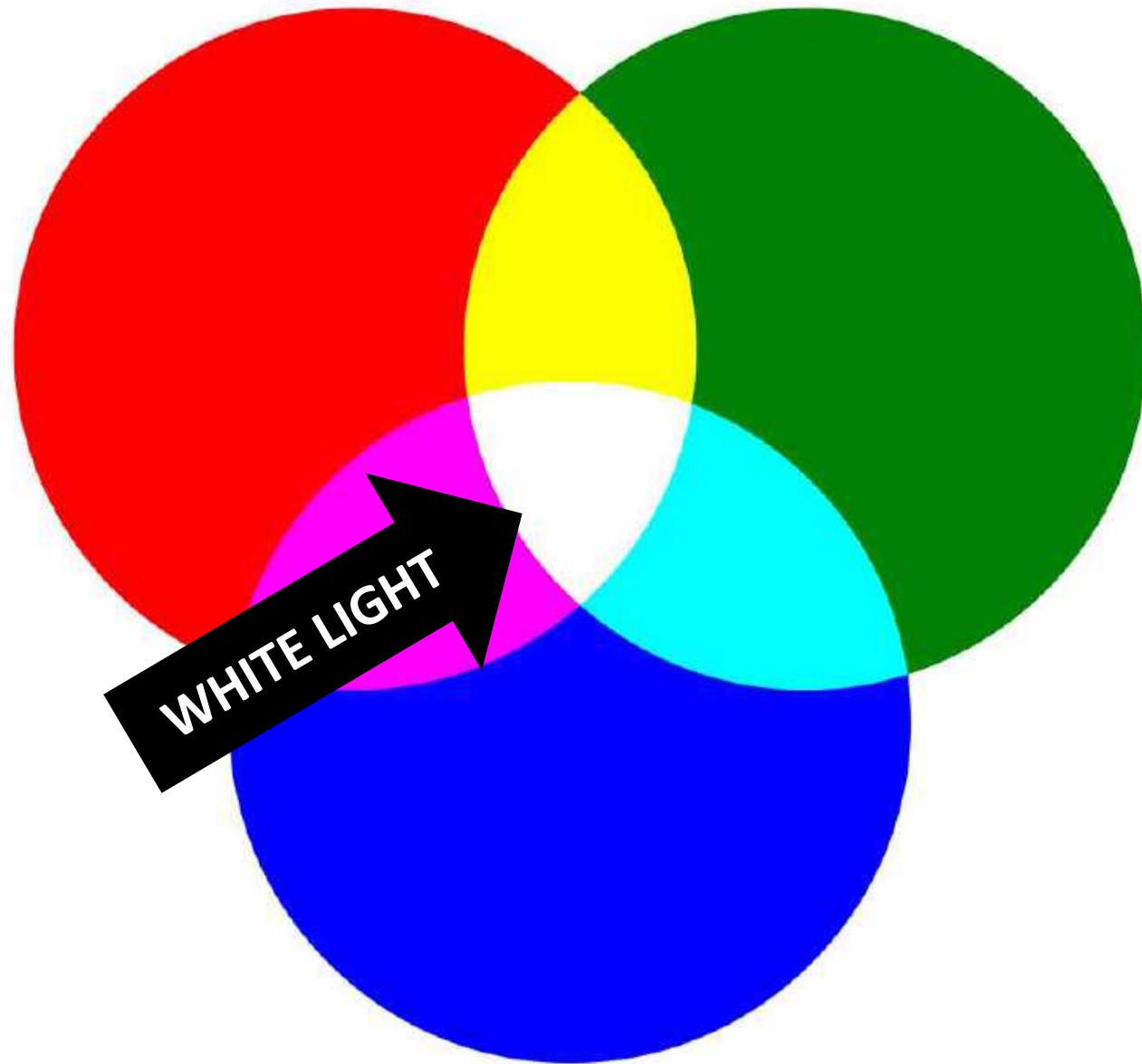
② AESTHETIC FUNCTION

ONLY GREEN IS REFLECTED

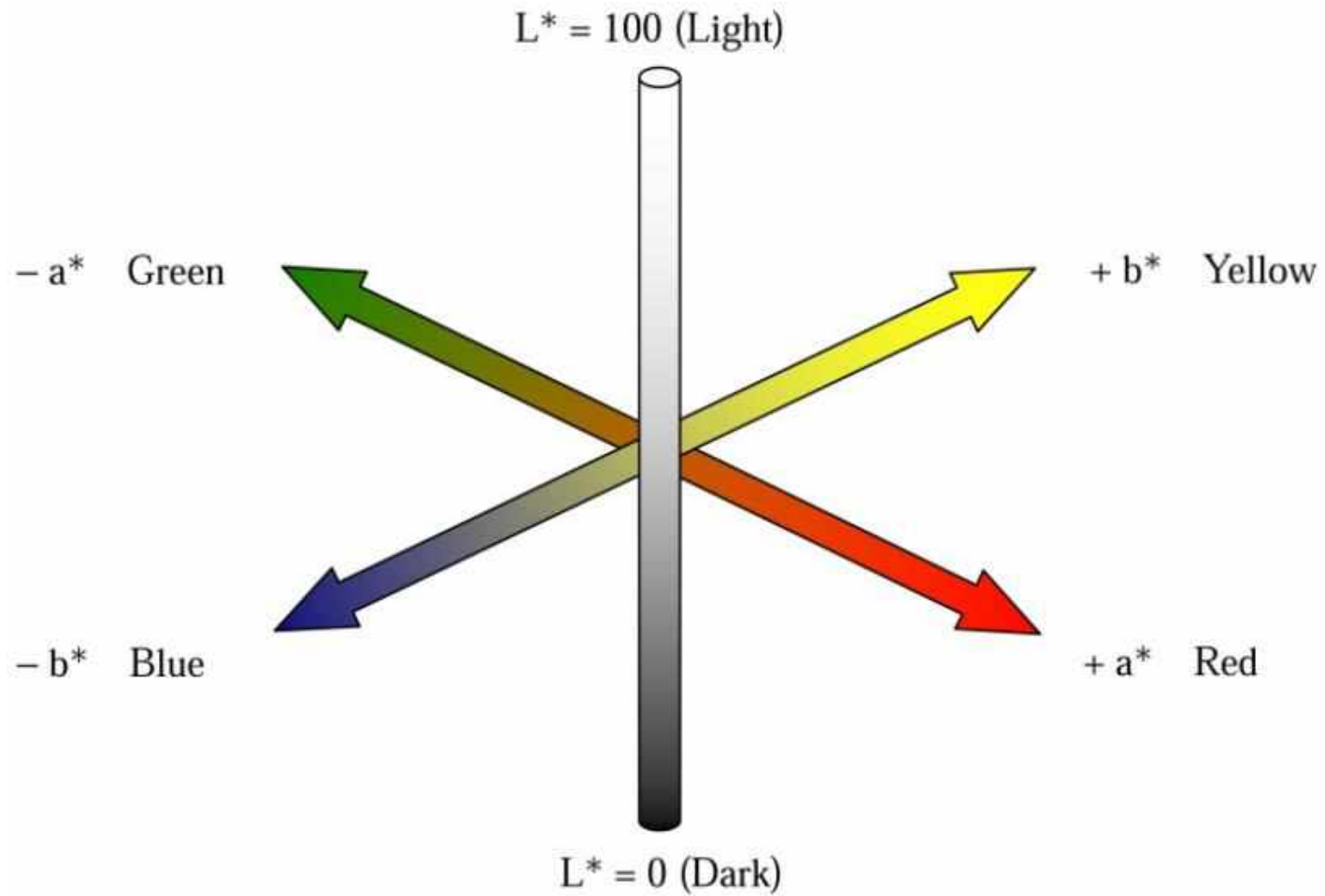


② AESTHETIC FUNCTION

**WHITE COLOUR
REFLECTS MOST
SPECTRUMS**



**WHITE
COLOUR
CONTAINS
LIGHTS IN ALL
SPECTRUMS**



CIELAB COLOUR SPACE



② AESTHETIC FUNCTION

METALLIC PAINT FINISHES

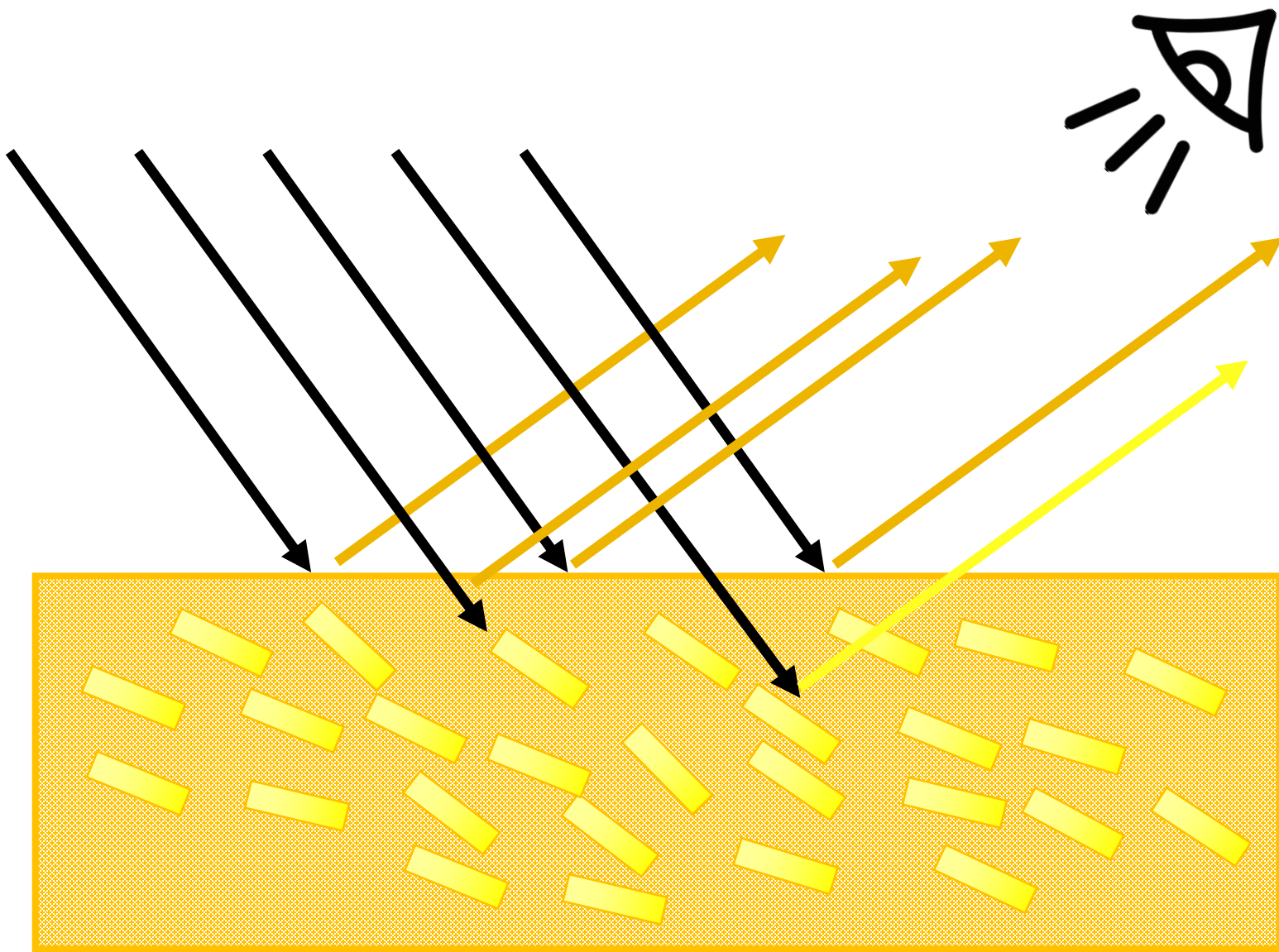


AESTHETIC FUNCTION

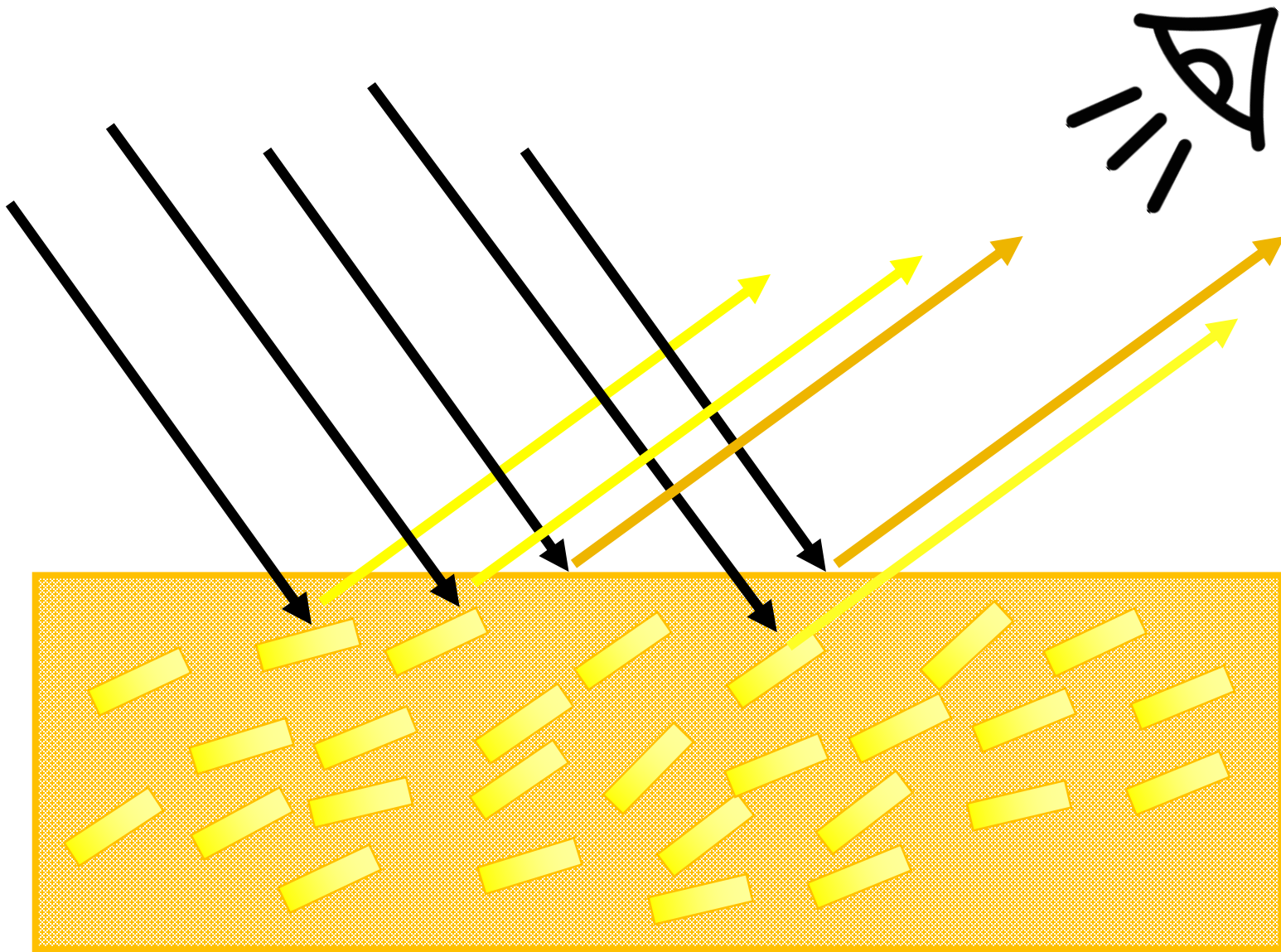
**VARIABLE
FINISHES
DEPENDING
ON VIEWING
ANGLES**

**METALLIC
PAINT
CONTAINS
METALLIC
PIGMENTS**

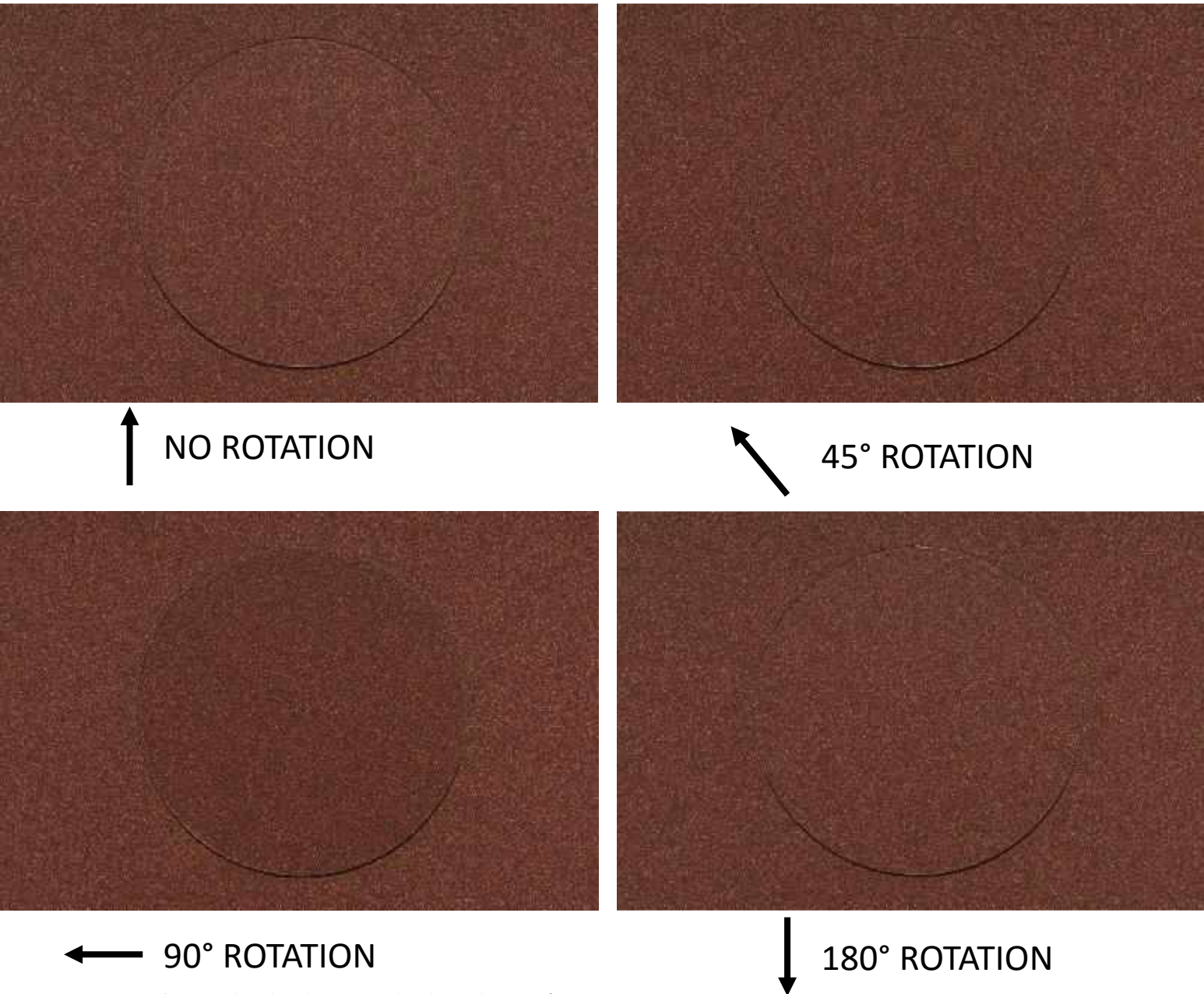




**GIVES
DIFFERENT
REFLECTION
OF LIGHTS**



**GIVES
DIFFERENT
REFLECTION
OF LIGHTS**



DIRECTIONAL (GEOMETRIC METAMERISM)

**METALLIC
FINISHES IN
VARIOUS
SHADES**



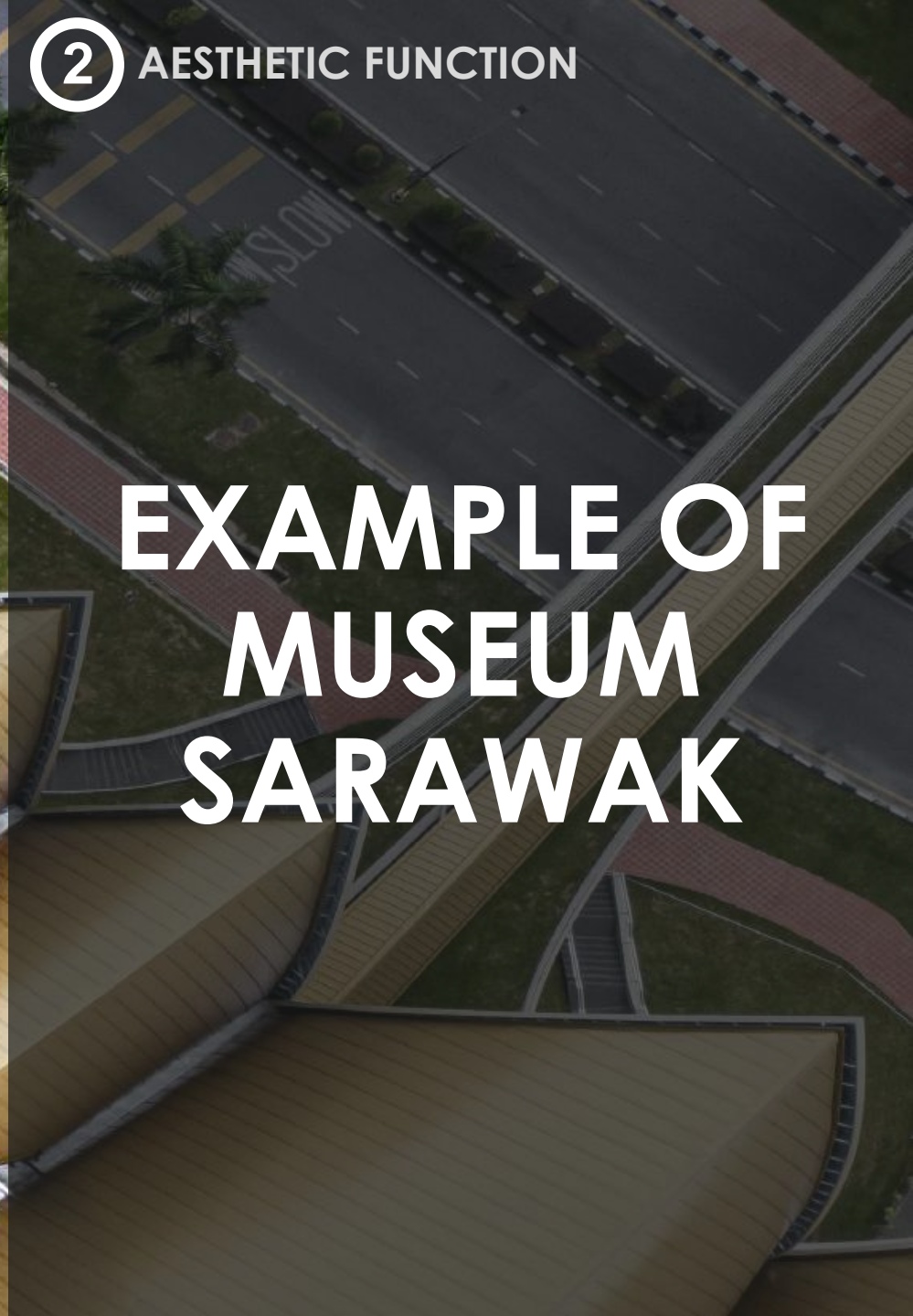
**METALLIC
APPEARANCE
MIMICING
GOLD**



VARIOUS SHADES OF GOLD

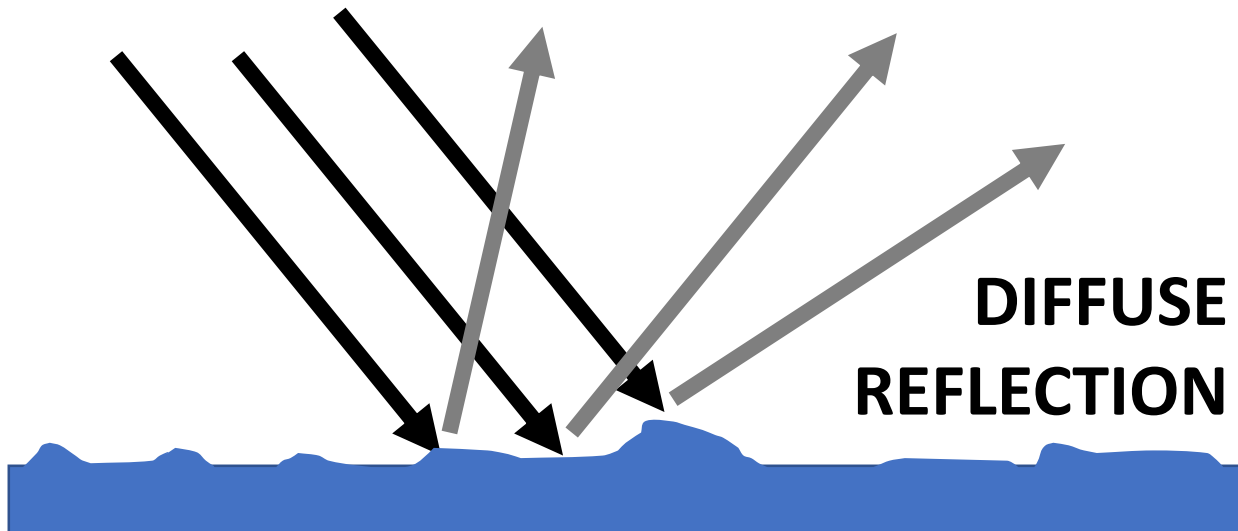
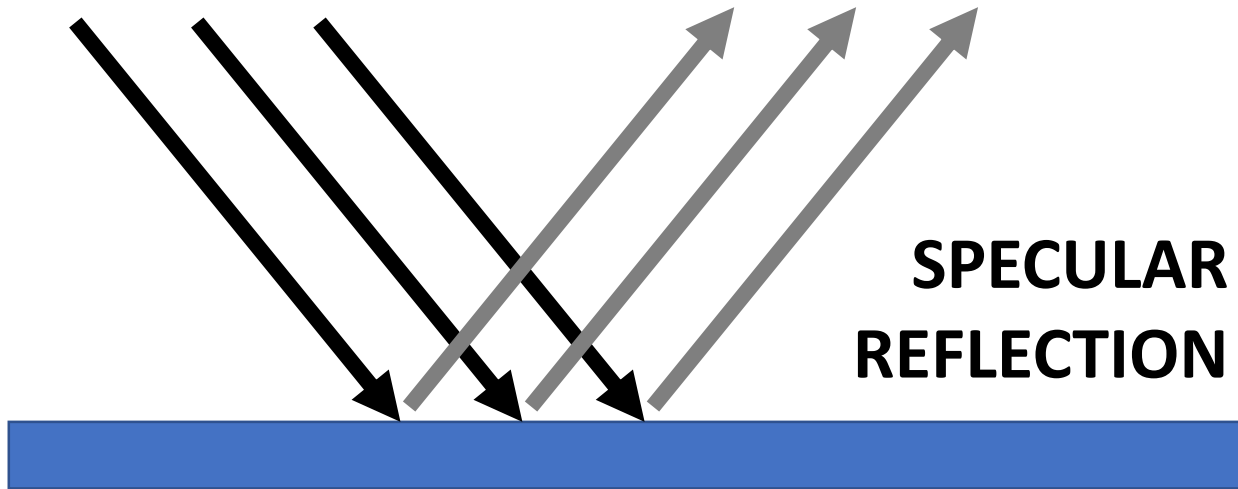
② AESTHETIC FUNCTION

EXAMPLE OF MUSEUM SARAWAK





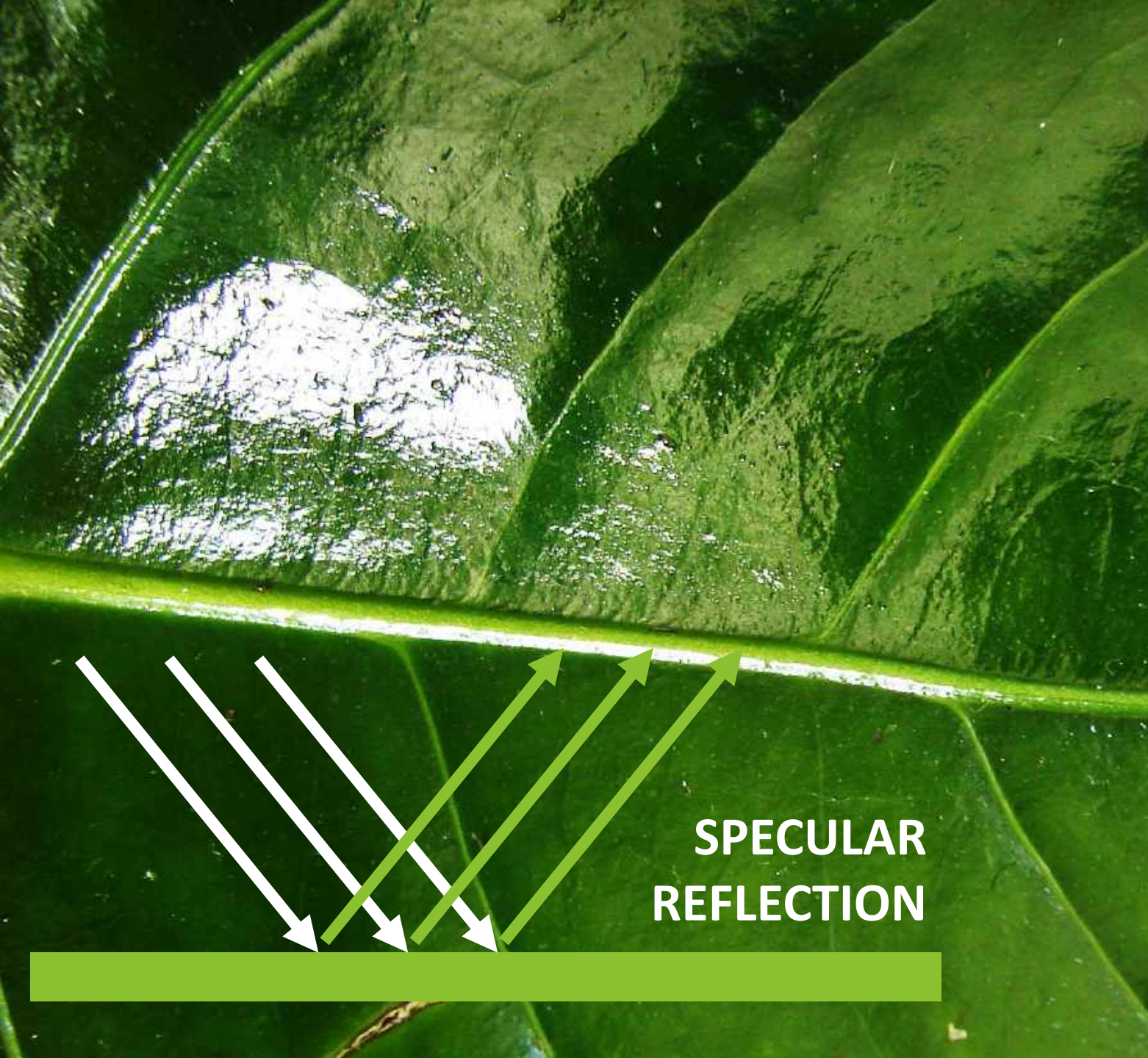
MATTE FINISHES



LIGHT REFLECTION

WAXY LEAF

SPECULAR
REFLECTION

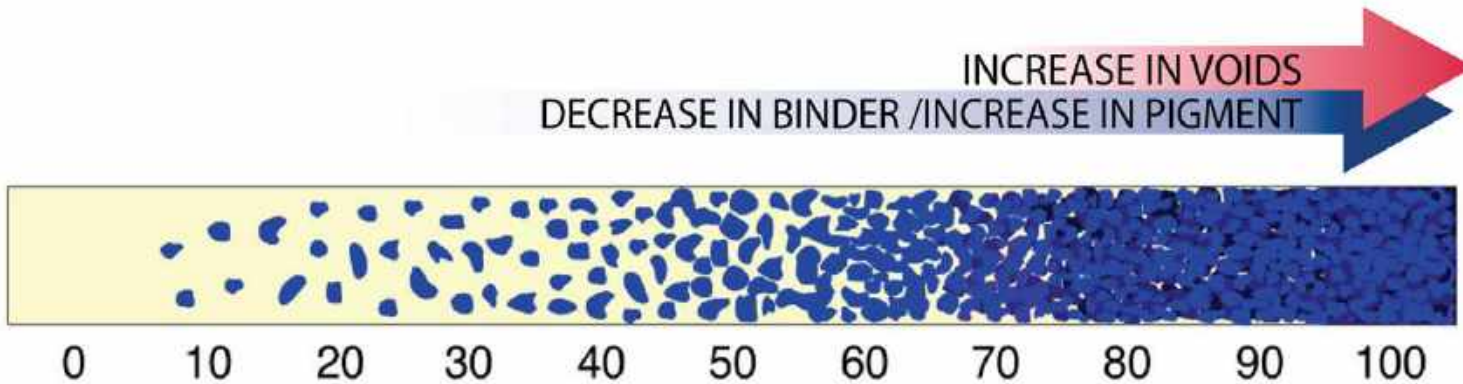




HAIRY LEAF

DIFFUSE
REFLECTION

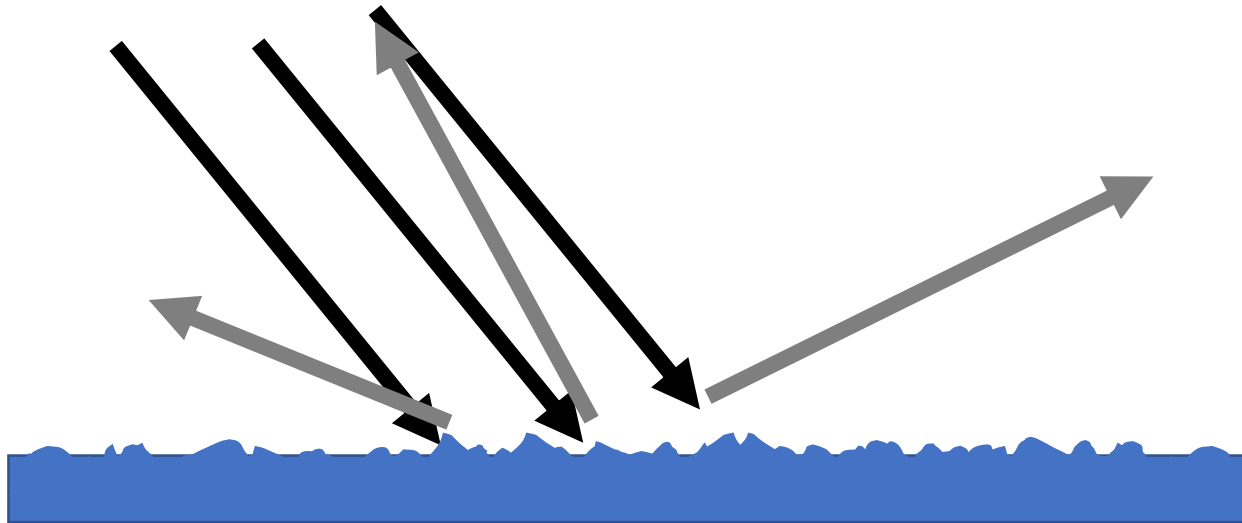
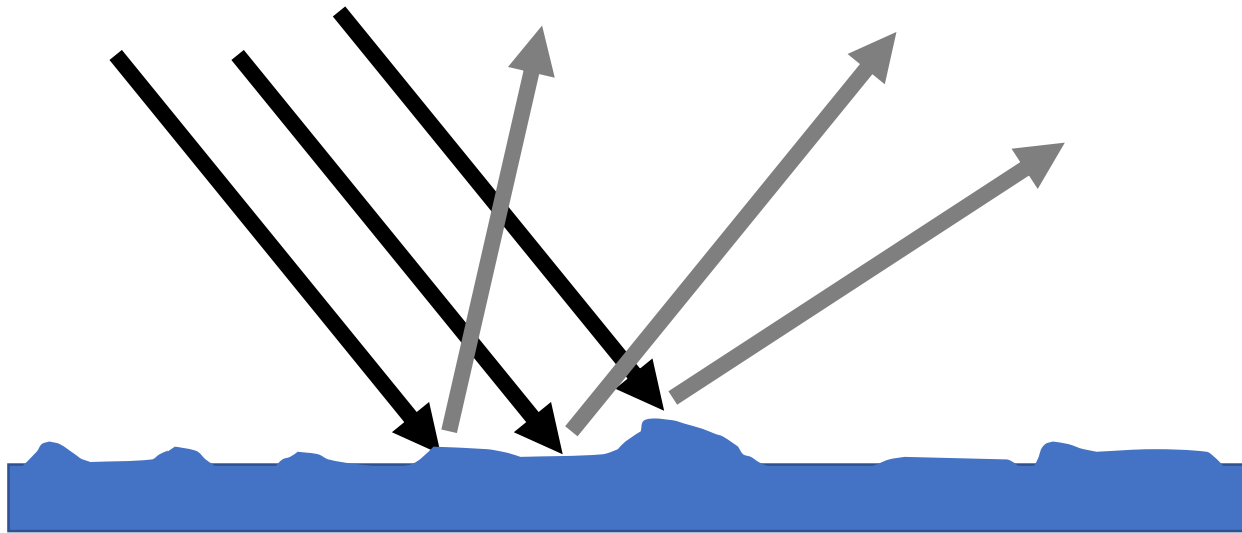
② AESTHETIC FUNCTION



HIGHER
PIGMENT
VOLUME
CONC.

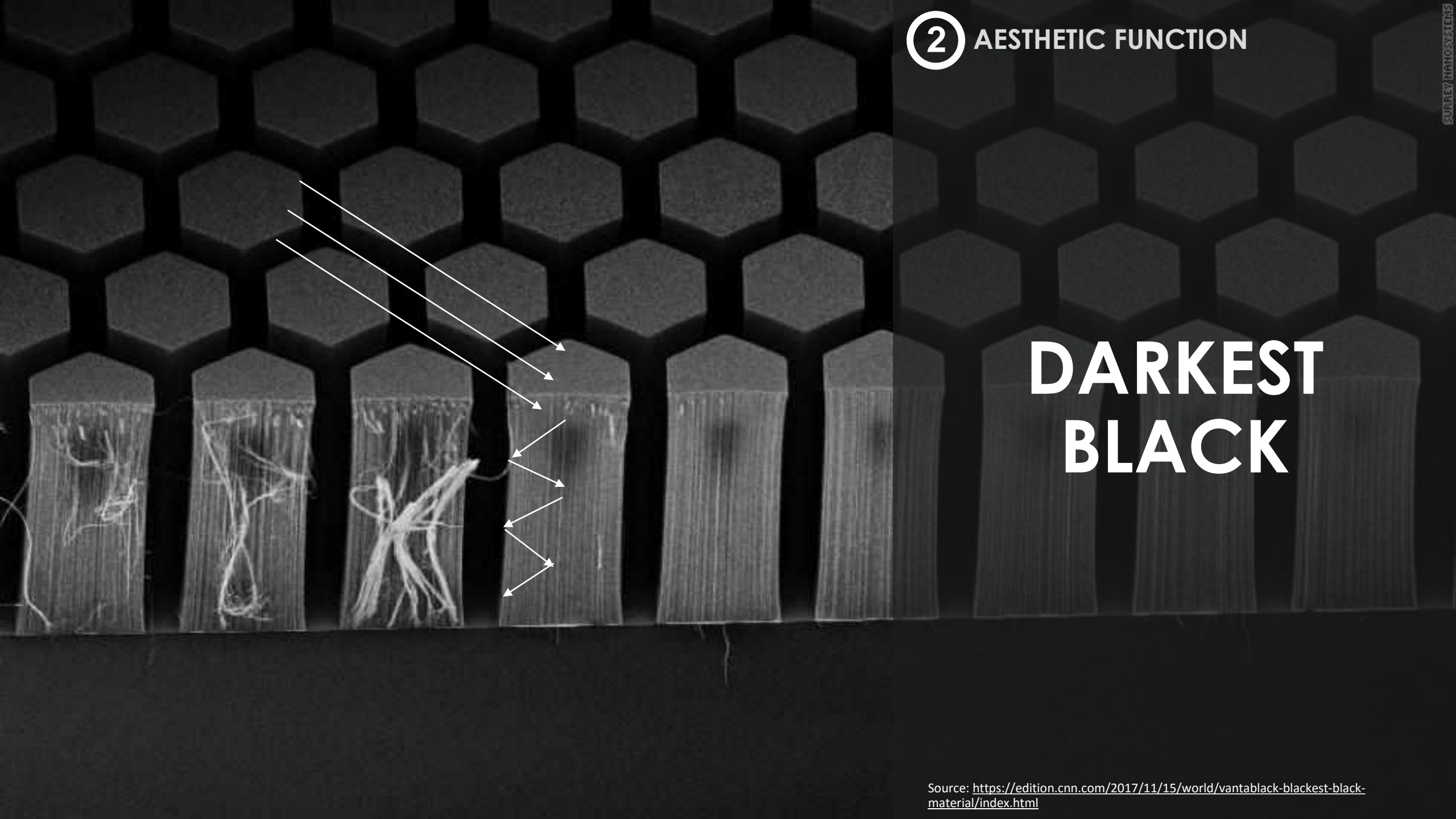
=

LOWER GLOSS



**DEPENDENT
ON SURFACE
ROUGHNESS**

PYEONGCHANG WINTER OLYMPICS BUILDING



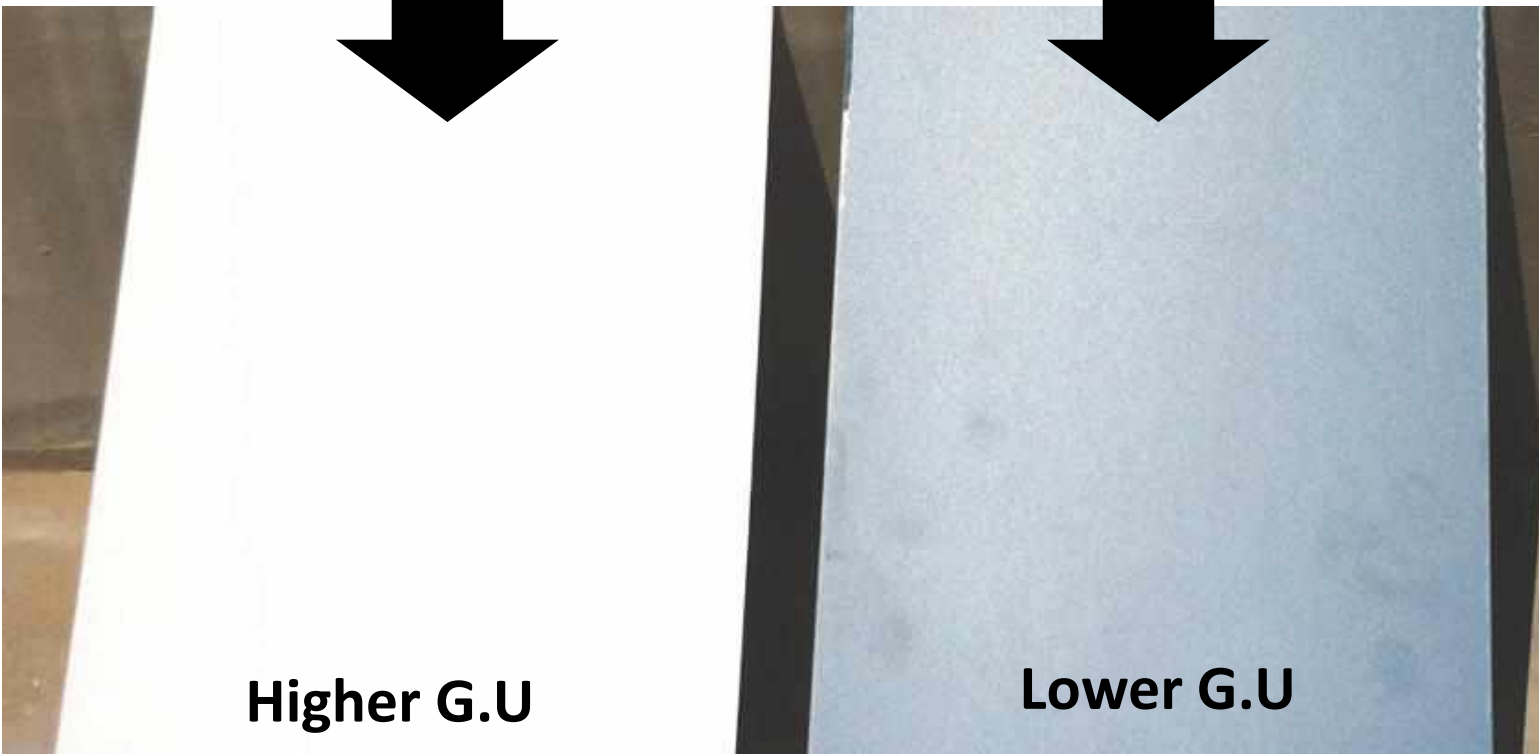
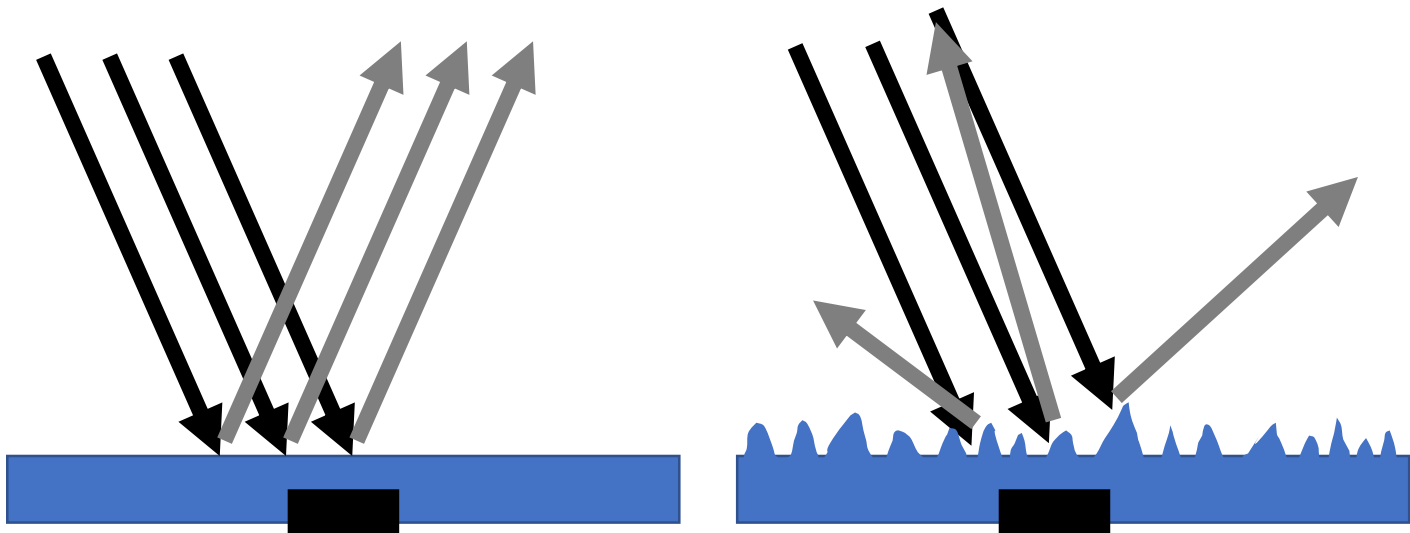
**DARKEST
BLACK**



Glare due to high specular reflection

**MINIMIZE
GLARE**

Time: 12:55pm



Higher G.U

Lower G.U

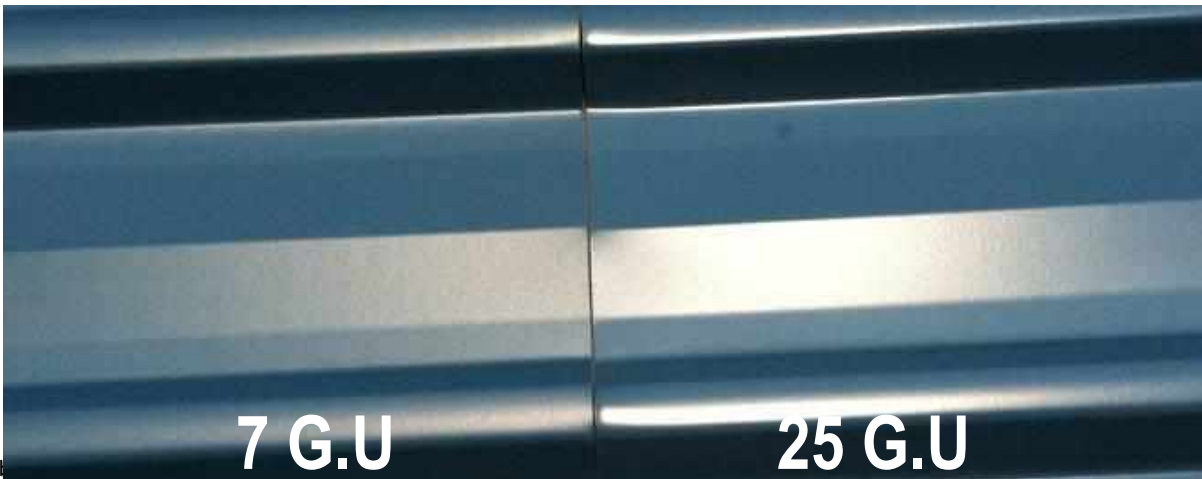
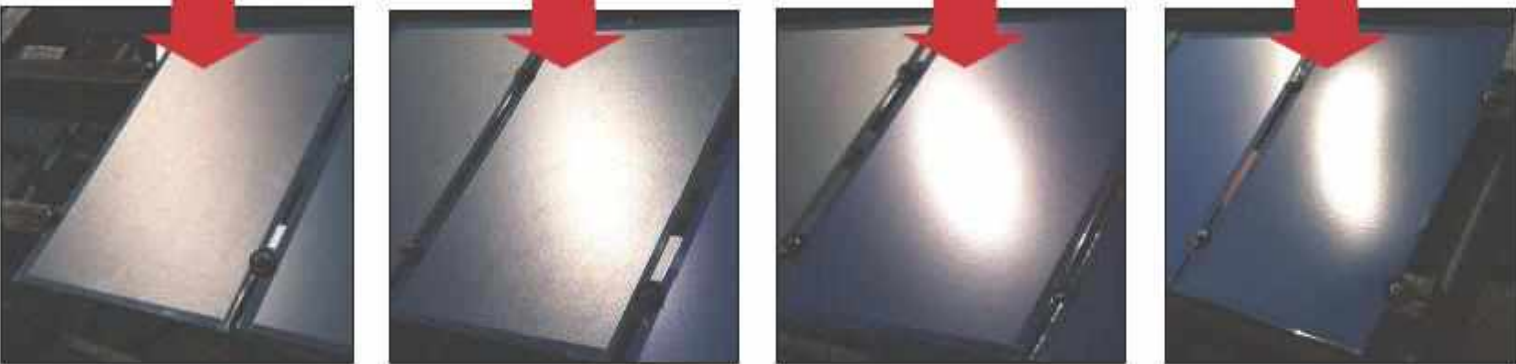
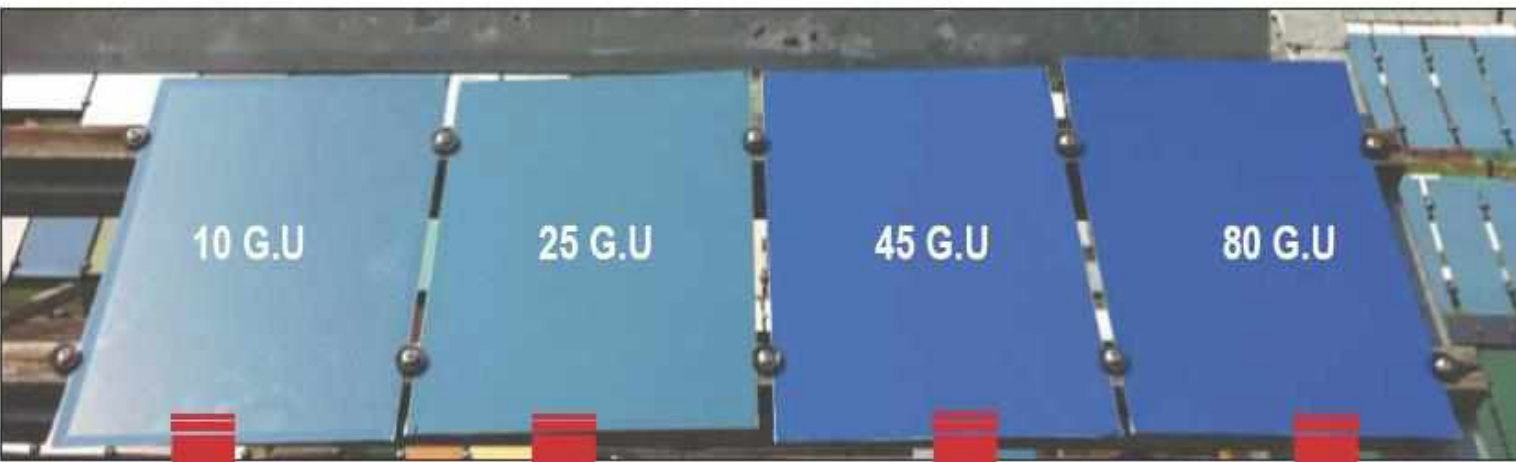
QUANTIFIABLE
BY
GLOSS UNIT
(G.U.)





② AESTHETIC FUNCTION

**GLOSS UNIT
AFFECTS
COLOUR
INTENSITY**



**SUITABLE FOR
HIGH PITCH
ROOF**



**ROOF IS
VISIBLE ON
THE GROUND**





2 AESTHETIC FUNCTION

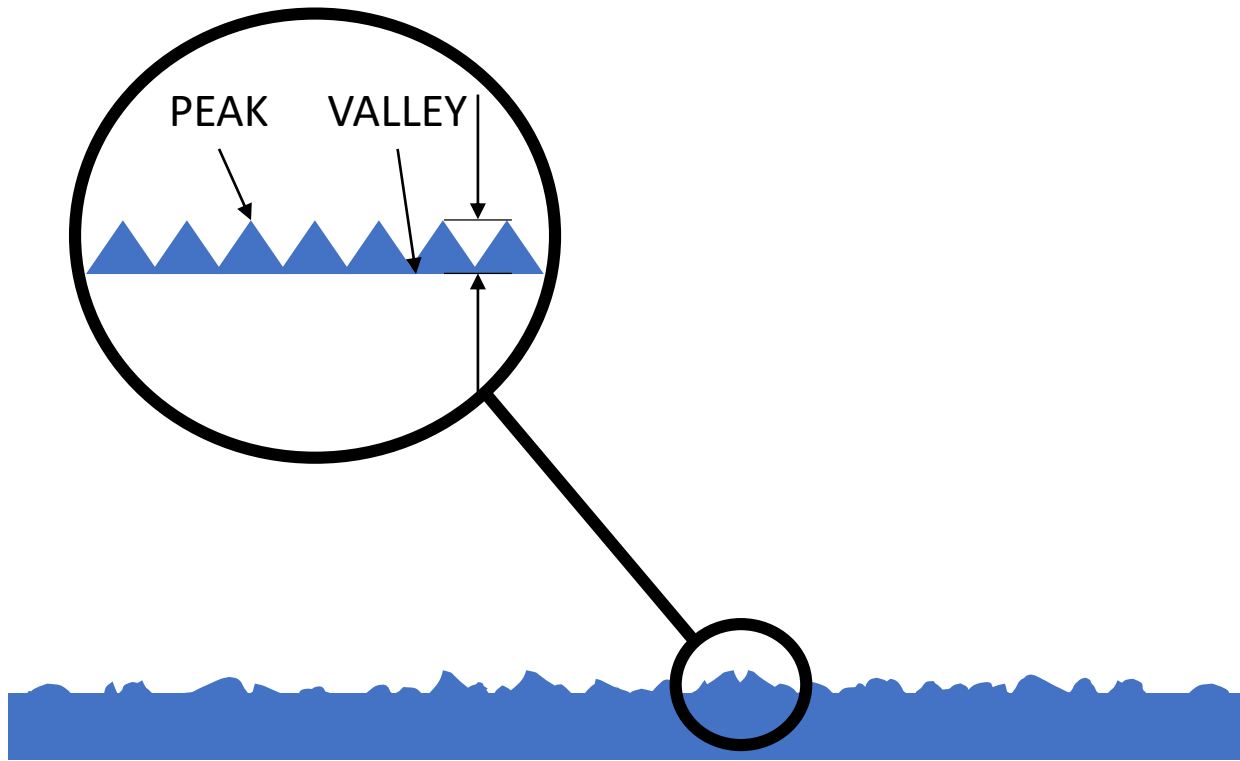
**ROOF
AROUND
HIGH RISES TO
MINIMIZE
GLARING**



ROOF IN THE
VICINITY OF
COAST

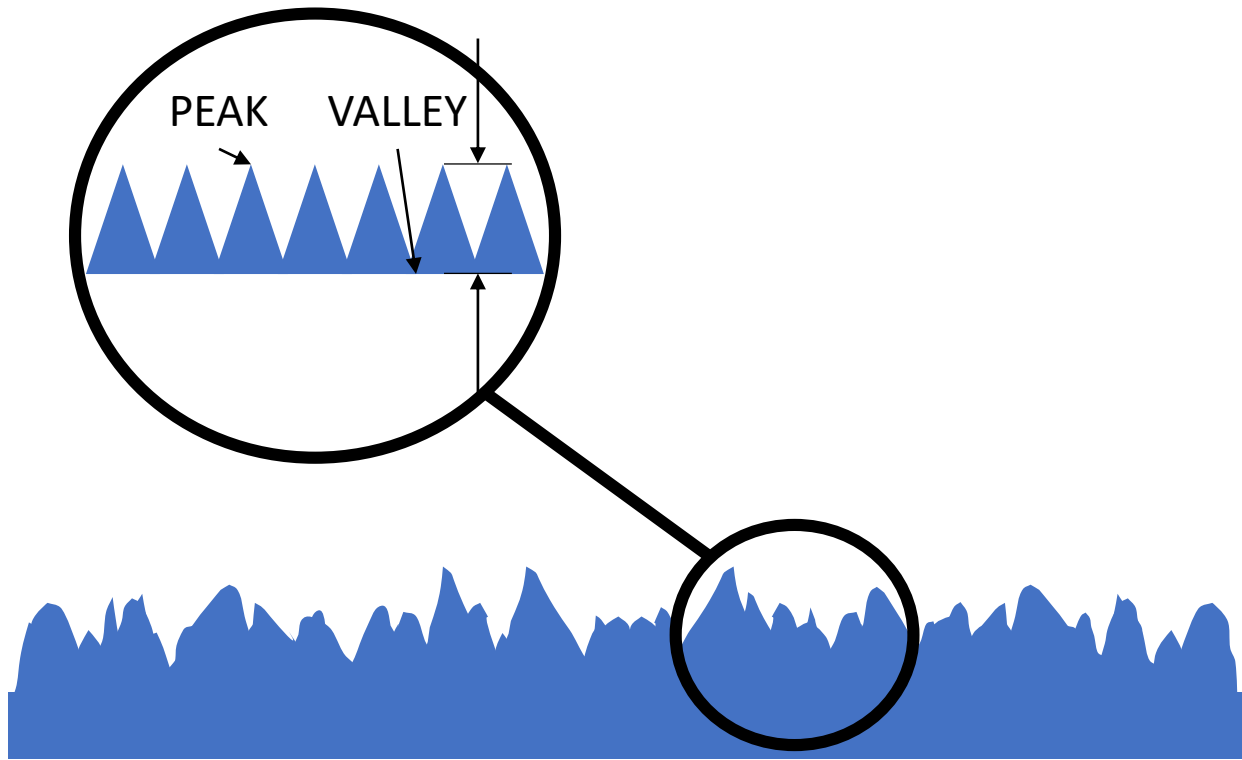


WHY TEXTURED FINISHES?



MATT SURFACE

MATTE VS TEXTURED



TEXTURED SURFACE

MATTE VS TEXTURED

MATTE

② AESTHETIC FUNCTION

**MATTE
VS
TEXTURED
SURFACES**

TEXTURED

**INSPIRED BY
RAW FINISHES**





② AESTHETIC FUNCTION

**INSPIRED BY
NATURAL
FINISHES**

TEXTURED FINISHES

A close-up photograph of a brown, ribbed architectural surface, possibly a wall or ceiling. The ribs are parallel and run diagonally across the frame. The lighting creates soft shadows, emphasizing the texture and depth of the material.

② AESTHETIC FUNCTION

**ELEMENTAL
&
CONTEMPORARY**



② AESTHETIC FUNCTION

**BUT
MALLEABLE**



2 AESTHETIC FUNCTION

**TO ACHIEVE
VERSATILE &
MODERN
DESIGNS**

**GETS THE
SIMILAR
BENEFIT OF
LOW GLOSS
UNIT SURFACE**

TEXTURED
(7 G.U)

MATTE
(7 G.U)

② AESTHETIC FUNCTION

**GETS THE
SIMILAR
BENEFIT OF
LOW GLOSS
UNIT SURFACE**

NORMAL
(25 G.U)

**TANGIBLE
TEXTURED
FINISHES**



**OPTICAL
ILLUSION OF
METALLIC
EFFECT**



3

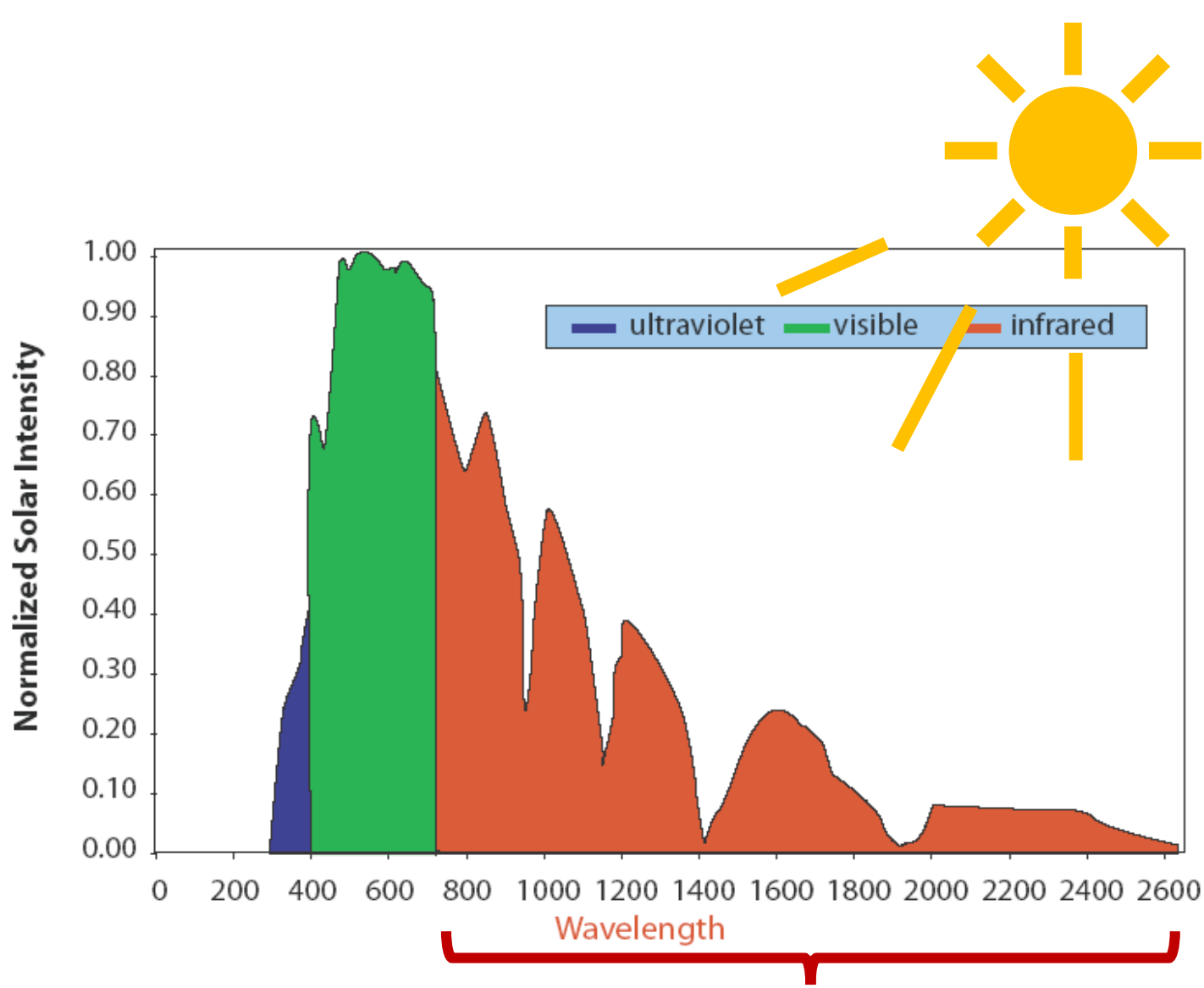
**OTHER
FUNCTIONALITY**



ADDITIONAL FUNCTIONS

**HIGHER
SOLAR
REFLECTANCE
COATING**



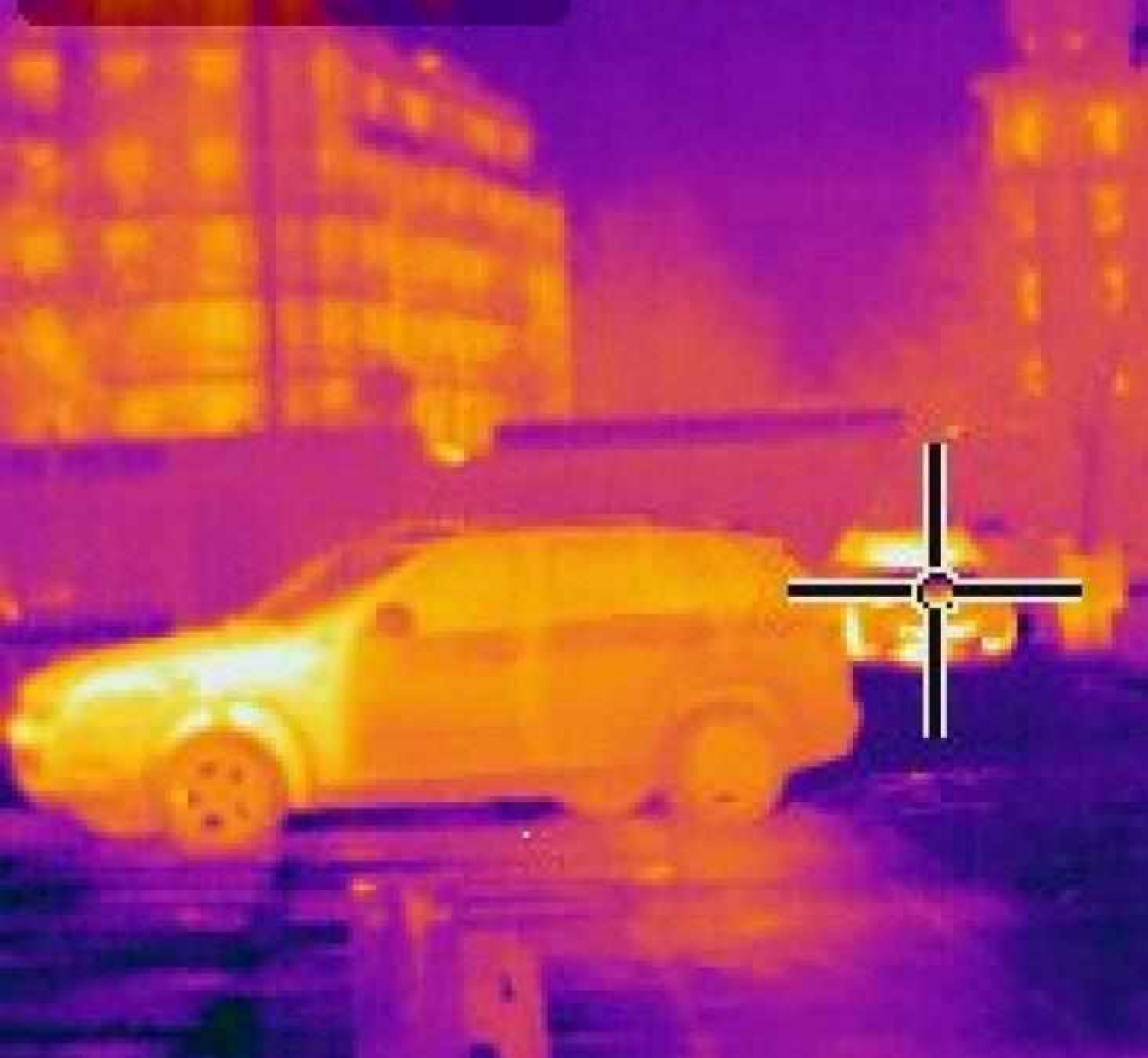


INFRARED LIGHT

**INFRARED
(NOT VISIBLE)**

③ OTHER FUNCTIONALITY

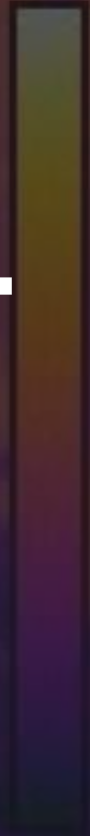
**CAN ONLY BE
SEEN FROM
INFRARED
CAMERA**



3 OTHER FUNCTIONALITY

6.2

**REDUCE
URBAN HEAT
ISLAND
EFFECTS**



-1.9

③ OTHER FUNCTIONALITY

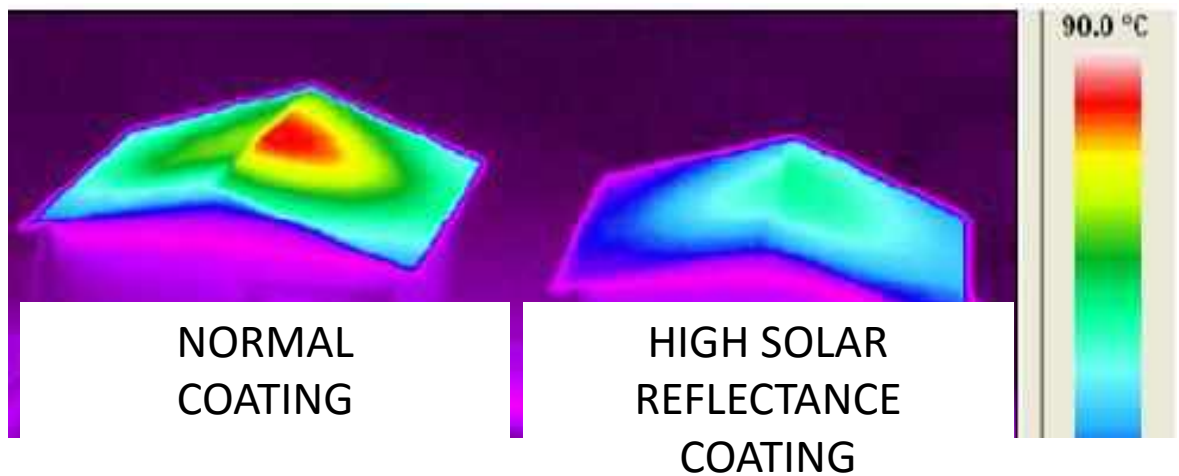
**SOLAR
REFLECTANCE**



**EVEN
THOUGH FOR
EARTH TONE
BUILDING
ENVELOPE**



HIGH SOLAR REFLECTANCE COATING



**NO SELF-CLEANING
ABILITY**

**SELF-CLEANING
ABILITY**

3 OTHER FUNCTIONALITY

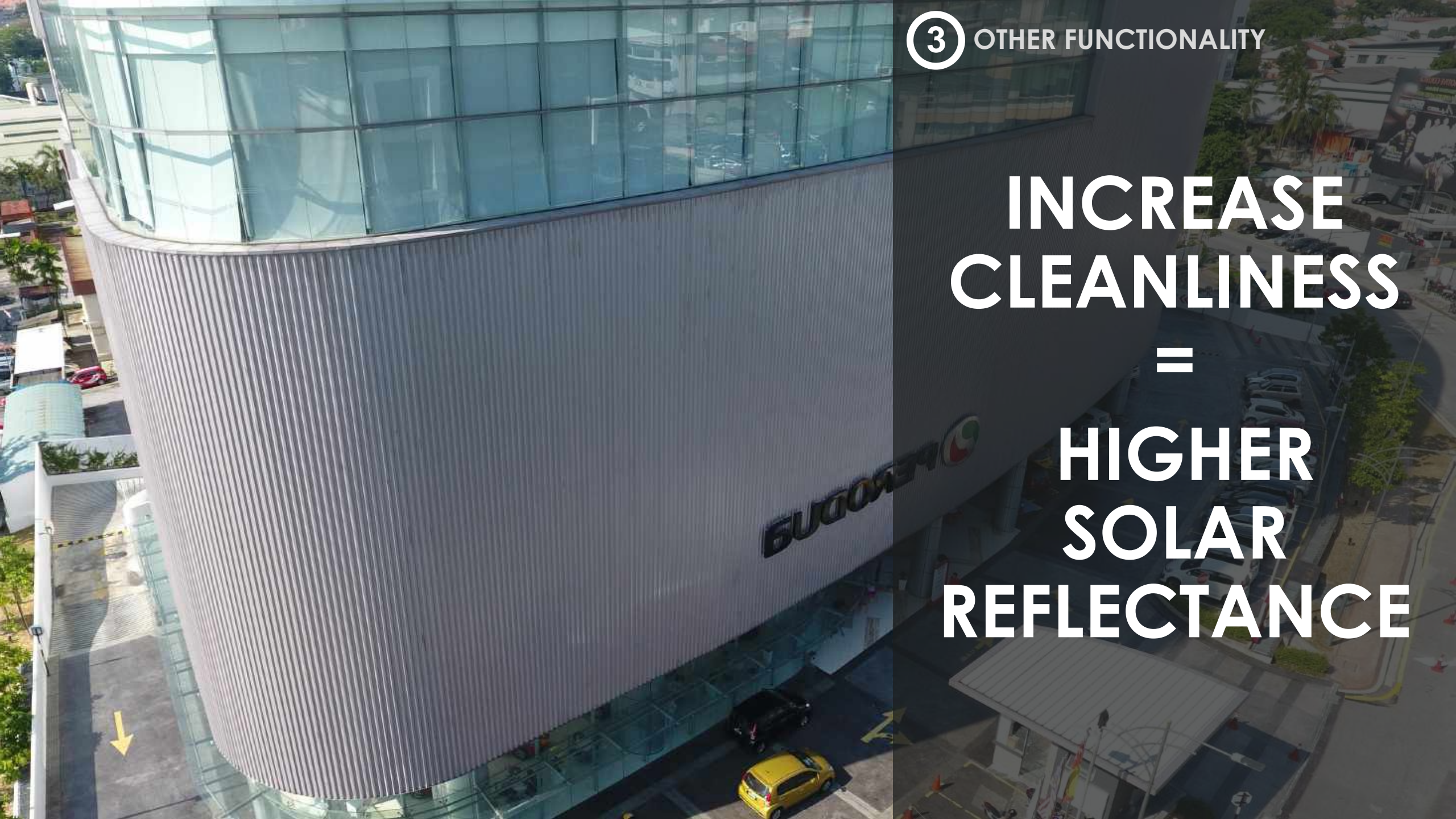
**CLEAN
TECHNOLOGY**

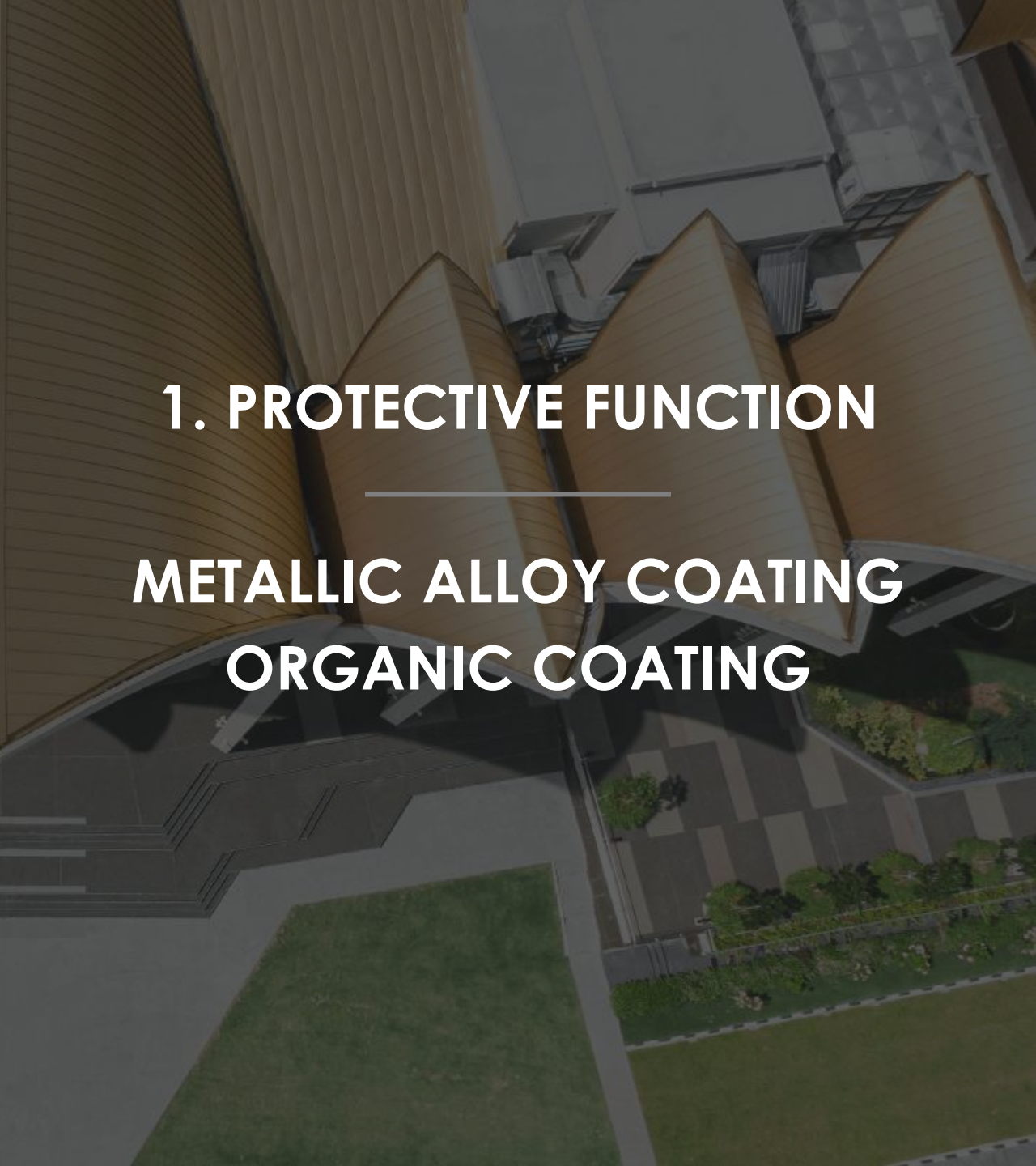


**IMPROVED
SELF-
CLEANING
CAPABILITY**



**INCREASE
CLEANLINESS
=
HIGHER
SOLAR
REFLECTANCE**





1. PROTECTIVE FUNCTION

METALLIC ALLOY COATING

ORGANIC COATING



2. AESTHETIC FUNCTION

COLOURFUL
METALLIC FINISHES
MATTE FINISHES
TEXTURED FINISHES



3. OTHER FUNCTIONALITY

HIGH SOLAR REFLECTANCE
SELF-CLEANING



**QUESTION
&
ANSWER
SESSION**



steel CONNECT

Colorbond®

Zincalume®

TrueCore®



events@bluescope.com.my



bluescope.com.my



BlueScope Malaysia