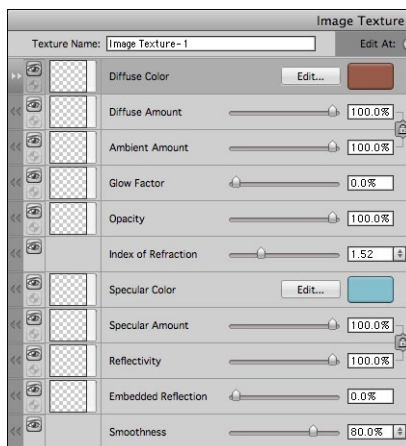
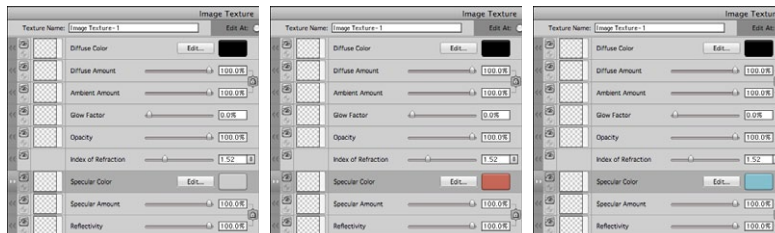
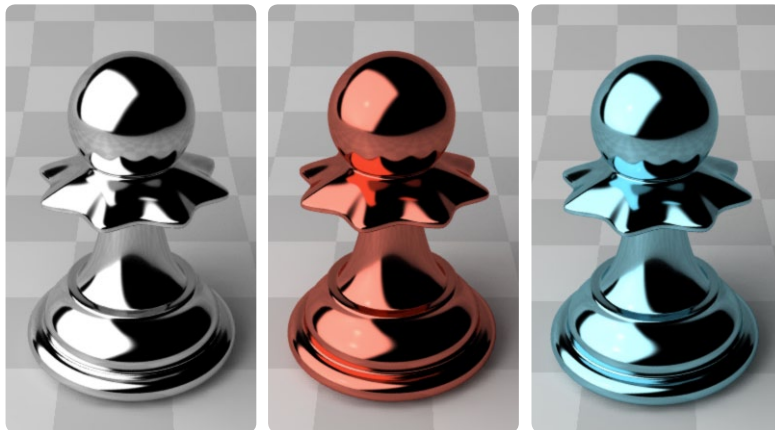


REFLECTIVITY



Area of influence
by the
Diffuse Color

Area of influence
by the
Specular Color

COLOR

Changing the Specular Color alters the coloration of the Reflectivity channel. This is most often used with metals.

COLOR, CHANNELS OF INFLUENCE

A material can be colorized in two ways.

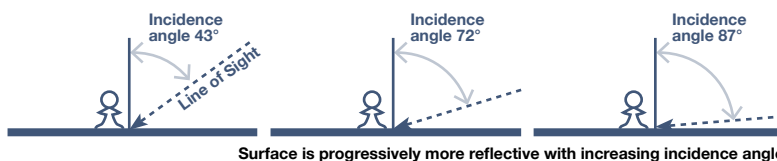
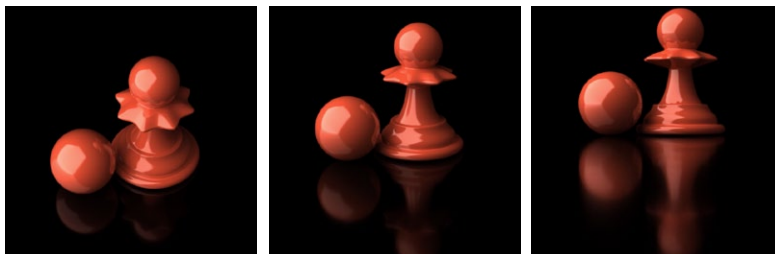
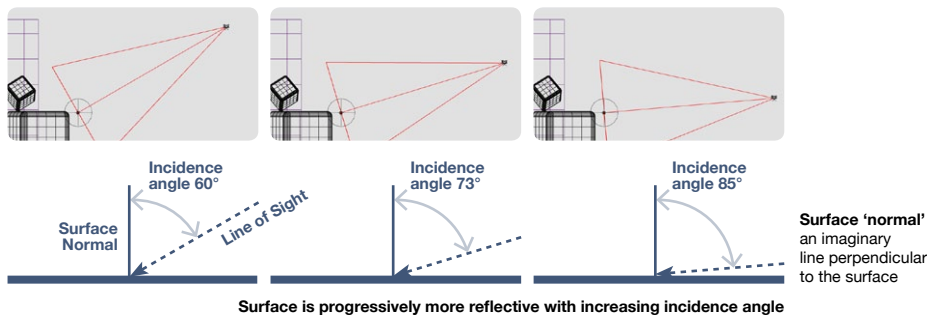
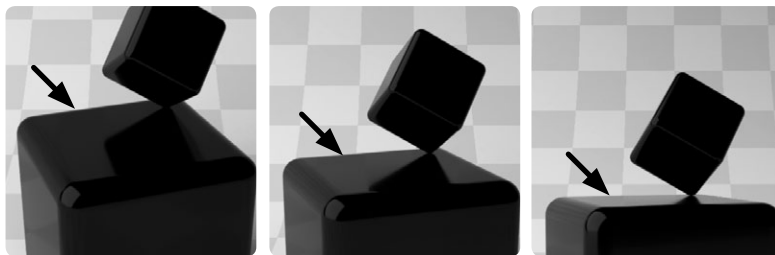
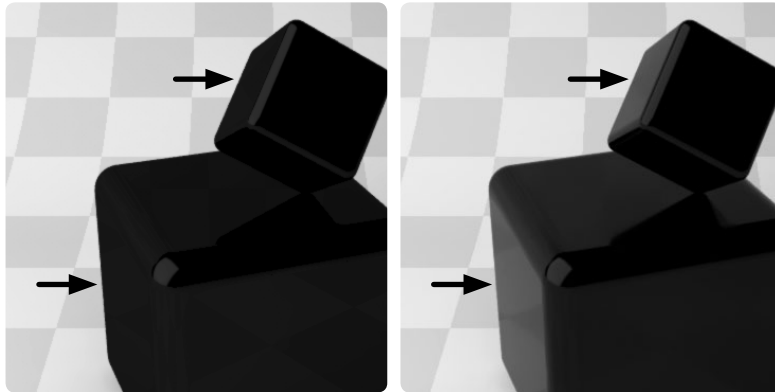
VIA DIFFUSE COLOR

determines the color of the diffuse surface, opacity and glow channels.

VIA SPECULAR COLOR

determines the color of the specular and reflection channels.

REFLECTIVITY



VIEW DEPENDENCE INCIDENCE ANGLE

Look carefully at the two images at left. The left image looks quite flat. The material uses a uniform 10% reflectivity across the surface. It looks unnatural.

The two right images have a more natural appearance as a result of view dependent reflectivity. This means light reflects with differing degrees of intensity depending on the angle of the viewer relative to the surface.

The sides of the cubes are increasingly reflective as they face away from the viewer.

A property called 'incidence angle' governs the degree of reflectivity. The higher the incidence angle the more reflective a surface becomes, especially if the surface is highly polished. This view dependence is a real-world property of light.

ON FLAT SURFACES

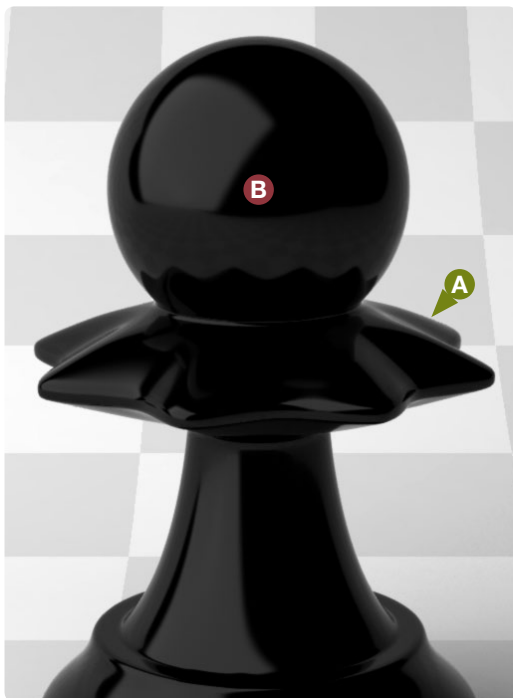
As the camera becomes lower relative to the top of the large cube, this top area progressively becomes more reflective.

Technically speaking, the incidence angle is increasing. Imagine a line perpendicular to this top surface measured against the angle of the line of sight. This is the incidence angle. As this value approaches 90°, the surface becomes more reflective.

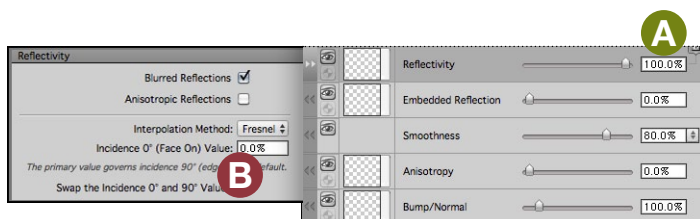
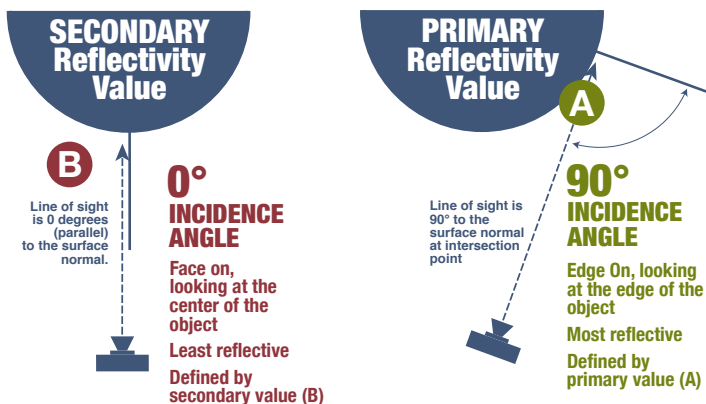
REFLECTIVITY



10% UNIFORM



VIEW DEPENDENT (10% TO 100%)



VIEW DEPENDENCE ON CURVED SURFACES

Curved surfaces become more reflective towards the edge. Look closely at the right pawn rendering and compare to the left uniformly reflective pawn.

The illustrations at left show the camera's line of sight relative to the object's 'surface normal'. The angle between the line of sight and the surface normal determines the degree of reflectivity. This simply means objects become more reflective towards the curved edge.

The **least reflective** part of a surface is known as 'Incidence Zero' or 'face on' (A). This simply means the line of sight is exactly parallel with the surface normal.

The **most reflective** part of the object will always be right at the very edge, or 'Incidence 90°' (B). This is sometimes referred to as 'edge on' or the 'glancing angle'.

CONTROLLING VIEW DEPENDENT REFLECTIVITY

A surface can be set to reflect uniformly. This is the case when no interpolator is enabled.

However the most realism is attained by setting these two reflection parameters. The material system has two fields for controlling incidence 0 and 90 reflection intensity. **Reflectivity increases, or interpolates, between these two values across a surface as incidence angle increases.**

PRIMARY REFLECTIVITY INCIDENCE 90°, EDGE ON

The value which determine 'edge on' (or incidence 90) is the value in the main material dialog (B). If the secondary value is not enabled, this value sets uniform reflectivity across the surface.

SECONDARY REFLECTIVITY INCIDENCE 0°, FACE ON

The value which determines 'face on' (or incidence 0) is the value in the Reflectivity pop out menu (A).