

Introduction

A fully ground edge (SAE #1) is often a requirement in automotive, marine and equipment applications where the edge of the glass is exposed and can be touched by human hands while installed in the field. Originally, the requirement became called for in automobile sidelites where the window was rolled halfway down exposing the top edge to be touchable. The Engineering Society for Advancing Mobility Land, Sea, Air and Space (SAE International) first issued American National Standard J673 in July of 1950 and is revised periodically. Copies of SAE J673 may be found at SAE.org.

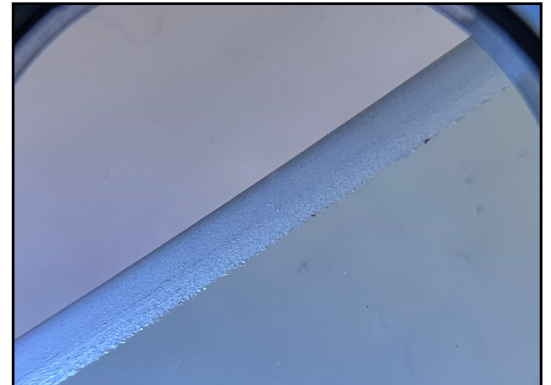
Glass Edge Specifications

The SAE #1 automotive edge is machined with a diamond wheel at RPM's in excess of 8,000. The glass edge rides in a precise groove cut into the wheel and typically .015" - .055" (depending on the glass thickness) is removed. Typically, #1 Edge glass is cut .03125" - .09375" (depending on glass thickness) larger than the desired nominal size. The ending result is an edge with a C crowned, dull satin finish.

#1 Edge Glass should appear uniform with an equally crowned radius and a dull satin like finish. There should not be an ridges on the glass face (able to be felt by hand) and under 10-20x magnification (with a jewelers loupe) appear consistent and uniform.



Glass with an SAE #1 ground edge viewed without magnification.



Glass with an SAE #1 ground edge. Under 20x magnification

True 90 degree corners should be avoided and a minimum of a 0.5mm radius should be applied to all truly square corners. Right corners (90 degree) or tight radiuses should appear uniform and consistent with no dips or "lead ins" as the wheel approaches the corner.



An overlay of a properly ground 6mm radius on top of a rounded or dipped corner

Revisions to SAE Standards

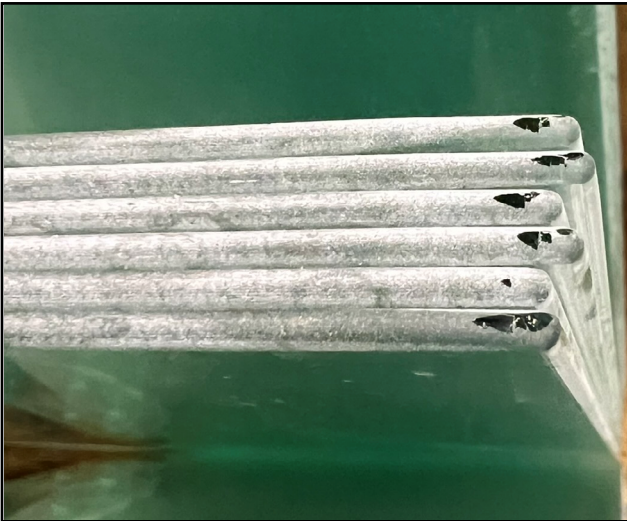
The SAE J673 standard has been revised ~10 times since 1950 and seven times since 1967, all of which are available at SAE.org. Prior to 2021, all versions of J673 contained the following statement in reference to a #1 Quality Edge.

5. **Edges**—For various applications and locations. Figure 3 to Figure 5.

NOTE—Flake (shell) chips 2.3 mm (0.9 in) and small shiners (wheel skips) 3.1 mm (0.12 in) diameter or 1.5mm (0.06 in) wide by 12 mm (0.5 in) long, to an accumulated length of 38 mm (1.5 in), are allowed on Edge No. 1. Larger chips are allowed on other type edges as long as the proper function of the glass is not impaired.

5.1 **Edge No. 1**—Crown Edge, Satin Finish (such as diamond wheel) (Figure 6A) indicates approximate radius fine grind along the edges; for all exposed edges.

The 2021 revision of SAE J673 was published with the Edge Note omitted leaving the aesthetic quality (appearance) of the edge to be at the fabricators discretion thus making a clear cut go/no go definition difficult to create.. Depending on the technology deployed at the facility, it is reasonable to suggest the face of the glass shall have no visible chipping or flaking. Older equipment and technology may have .5 - 1.0mm of chipping or flaking along the edge as long as the chipping and flaking is in no more than a 12mm span.



Small wheel skips or “shiners” are acceptable as long as the skip/shiner does not exceed 8mm in length and does not reach the face of the glass. If the skip is visible from either side of the glass, viewed perpendicular, at any distance, the skip is deemed to have reached the face.



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