

SECTION B

American Brush Manufacturers Association Summary of Revisions - Proposed ANSI B165.1 R2018

<u>Clause</u>	<u>Comment</u>	<u>Rationale</u>	<u>Revision Language</u>
3.18	Clarifying comment	MSFS, SFS and Max RPM are synonymous	3.1.8 maximum safe free speed (MSFS or max. SFS or MAX RPM): Synonymous with maximum safe rpm (free rotation or no load speed). The maximum speed at which the brush shall be rotated with no work applied (spinning free) to ensure safe operation. All brush manufacturers have the responsibility of determining the MSFS for their products. A recognized criterion for establishing this value for each brush is described in 8.3.
4.3	Clarifying additional information	To provide additional safety information	4.3 Marking When sufficient surface space is available, each brush shall be marked in a permanent manner to show the maximum safe free speed (MSFS or max. SFS or MAX RPM) in revolutions per minute; the brush shall also carry the words, "Wear eye protection," when sufficient space is available. If sufficient space is not available, the approved Eye Protection Icon can be substituted.

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5.12	Clarifying comment	Clarifies shank characteristics	<p>5.12 Solid shanks for brushes to be used with collets and chucks These requirements do not apply to shanks on twisted-in wire brushes. The shank shall be of a uniform cylindrical shape, to be used with circular collets and self-centering chucks. Shanks of other geometric shapes that may or may not include special locking features are not within scope of this standard. It is the responsibility of the tool manufacturer and brush manufacturer for providing a safe product design.</p> <p>Shank diameters shall be of nominal size, expressed in decimal form with a tolerance not exceeding +0.000 inch –0.005 inch or +0.000 mm –0.127 mm.</p> <p>The geometric configuration of shank-type brushes or shank-type arbors shall include generous fillets where the diameters of the parts increase and where stress concentration is likely to occur. Where extension of a brush shank or arbor shank is needed to obtain additional reach, a special tool extension shall be used. This tool or brush holder shall be of such dimension and geometrical shape as to withstand the brushing pressure used, and avoid deflection that causes vibrations that can become dangerous. The brushes shall be test-run under guarded or shielded conditions for 30 seconds after each mounting or remounting to ensure that they are properly gripped in the chuck or collet. Shank brushes used with an extension shall only be rotated when contained within the cavity or interior to be abraded. The power shall be turned off and the rotation of the brush stopped before the brush is extracted from the part.</p> <p>Construction details of user-made or user selected extension holders shall meet the foregoing requirements.</p> <p>Brushes used with shanks (types I through VI) are hazardous when chucked with the axis of the brush not parallel to, and concentric with, the axis of the chuck; or not tightened in the chuck tightly enough to drive it under load; or when used at speeds higher than those recommended by the brush manufacturer; or when the shank has not been inserted to the maximum depth with the minimum overhang.</p>
7.4	See 3.18	MSFS, SFS and Max RPM are synonymous	<p>7.4 Brush speed</p> <p>Before mounting a brush, it shall be determined that the machine speed does not exceed the maximum safe free speed (MSFS or max. SFS or MAX RPM) for the brush, as established by the brush manufacturer.</p> <p>Under no circumstances shall a brush be mounted on a machine whose rpm exceeds the maximum safe free speed (MSFS or max. SFS or MAX RPM) recommended for the brush.</p>

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8.1	See 3.1.8	MSFS, SFS and Max RPM are synonymous	<p>8.1 Safe free speeds Safe free speed is any speed below the maximum safe free speed (MSFS or max. SFS or MAX RPM). The maximum safe free speed (MSFS or max. SFS or MAX RPM) for each brush shall be established by the brush manufacturer (see 3.1.8).</p>
8.2	See 3.1.8	MSFS, SFS and Max RPM are synonymous	<p>8.2 Maximum speeds It shall be the user's responsibility not to exceed the maximum safe free speed (MSFS or max. SFS or MAX RPM) established by the manufacturer. It shall be recognized that the maximum safe free speed (MSFS or max. SFS or MAX RPM) is not necessarily the most efficient brushing speed. Better results are frequently obtained at speeds lower than maximum safe free speeds (MSFS or max. SFS or MAX RPM).</p>
8.3 Table 4	See 3.1.8	MSFS, SFS and Max RPM are synonymous	<p>Minimum test factor ¹⁾ ¹⁾ Maximum safe free speed (MSFS or max. SFS or MAX RPM) shall be multiplied by this test factor to establish the minimum speed at which bushes are to be tested by the brush manufacturer.</p>
8.5.2	See 3.1.8	MSFS, SFS and Max RPM are synonymous	<p>8.5.2 Speed adjustment control If the speed of the machine spindle is adjustable, the speed adjustment shall be under the supervision and control of competent and authorized personnel only. Such personnel shall use care in determining that the speed at any present moment conforms to and does not exceed the peripheral speeds (in surface feet/meters per minute), the rated MSFS (MSFS or max. SFS or MAX RPM) as established for a new brush, or both (see tables 5 and 5a).</p>
8.6.3	See 3.1.8	MSFS, SFS and Max RPM are synonymous	<p>8.6.3 The user's responsibility Before operating the machine at a special speed, the machine user shall make certain that the machine is operated with approved safety guards as defined in 7.7, and that the machine is maintained in a satisfactory condition, as defined in clause 5. After receipt of the brushes, it shall be the user's responsibility to provide safe handling, storage, and inspection for the brushes designed for special needs in accordance with clause 4 and to maintain his/her brushing equipment in a safe operating condition at all times. Rules of safe operation of this equipment submitted by the brush machine builder shall be observed as well as those rules specified in other clauses of this standard. A user shall not operate a brush designed for special needs faster than the special maximum safe free speed (MSFS or max. SFS or MAX RPM) established by the brush manufacturer. When an existing machine is altered by the user to operate at special speeds, the user shall assume all of the responsibility of a machine builder as outlined in this standard.</p>