Continue

0 ratings0% found this document useful (0 votes)2K viewsSaveSave ASME B1.1 - 2003 - Unified Inch Screw Threads - 1.... For Later0%0% found this document useful, undefined Home » Home » Technical information » ASME B1.1 – Unified Inch Screw Threads (UN, UNR, and UNJ Thread Forms) Defines thread specifications, including UNC (Unified National Coarse) and UN8 (8 threads per inch), commonly used for stud bolts. Download the ASME B1.1 pdf standard here This Standard specifies the thread form, series, class, allowance, tolerance, and designation for unified screw threads. (In order to emphasize that unified screw threads are based on inch modules, they may be denoted unified inch screw threads.) Several variations in thread form have been developed for unified threads; however, this Standard covers only [Unified] UN and UNR [external threads only] thread forms. For easy reference, a metric translation of this Standard has been incorporated as Nonmandatory Appendix C. Nonmandatory Appendices A through E contain useful information that is supplementary to the sections of this Standard. B1.15 – 1995, Unified Inch Screw Threads, UNJ Thread Form has been Incorporated into B1.1 – 2019, Unified Inch Screw Threads (UN, UNR, and UNJ Thread Forms). Basic profile of UN & UNR Screw Thread The UNR thread form and UN thread form are identical except that the roots of the external threads are rounded with a radius of curvature between 0.108 and 0.144 times the pitch. The rounded root improves fatigue strength compared to the UN thread form. The UNR thread designation standard was developed during the 1950s due to the request for fatigue-resistant safety- critical fasteners. Almost all externally threaded fastener manufacturers produce UNR rolled threads rather than plain unified form threads. • UNC – Unified National Coarse Thread – comparable with the ISO metric thread • UNF – Unified National Fine Thread • Female and Male UNC/UNF threads are both parallel • The UNC/UNF flank angle is 60° Unified threads comes in three different classes: a) for applications where a liberal tolerance is required to permit easy assembly even withslightly nicked threads b) most commonly used class for general applications c) for applications where closeness of fit and/or accuracy of thread elements are important UNC – Unified Coarse Threads UNC threads according ANSI B1.1: Major Diameter Threads per inch Major Diameter Tap Drill Size Pitch (in) (tpi) (in) (mm) (mm) (mm) #1 – 64 64 0.073 1.854 1.5 0.397 #2 – 56 56 0.086 2.184 1.8 0.453 #3 – 48 48 0.099 2.515 2.1 0.529 #4 – 40 40 0.112 2.845 2.35 0.635 #5 – 40 40 0.125 3.175 2.65 0.635 #6 – 32 32 0.138 3.505 2.85 0.794 #8 – 32 32 0.164 4.166 3.5 0.794 #10 – 24 24 0.19 4.826 4 1.058 #12 – 24 24 0.216 5.486 4.65 1.058 1/4″ – 20 20 0.25 6.35 5.35 1.27 5/16″ – 18 18 0.313 7.938 6.8 1.411 3/8″ – 16 16 0.375 9.525 8.25 1.587 7/16″ – 14 14 0.438 11.112 9.65 1.814 1/2″ – 13 13 0.5 12.7 11.15 1.954 9/16″ – 12 12 0.563 14.288 12.6 2.117 5/8″ – 11 11 0.625 15.875 14.05 2.309 3/4″ – 10 10 0.75 19.05 17 2.54 7/8″ – 9 9 0.875 22.225 20 2.822 1″ – 8 8 1 25.4 22.85 3.175 1 1/8″ – 7 7 1.125 28.575 25.65 3.628 1 1/4″ – 7 7 1.25 31.75 28.85 3.628 1 3/8″ – 6 6 1.375 34.925 31.55 4.233 1 1/2″ – 6 6 1.5 38.1 34.7 4.233 1 3/4″ – 5 5 1.75 44.45 40.4 5.08 2″ – 4 1/2 4 1/2 2 50.8 46.3 5.644 2 1/4″ – 4 1/2 4 1/2 2.25 57.15 52.65 5.644 2 1/2″ – 4 4 2.5 63.5 58.5 6.35 2 3/4″ – 4 4 2.75 69.85 64.75 6.35 3″ – 4 4 3 76.2 71.1 6.35 3 1/4″ – 4 4 3.25 82.55 77.45 6.35 3 1/2″ – 4 4 3.5 88.9 83.8 6.35 3 3/4″ – 4 4 3.75 95.25 90.15 6.35 4″ – 4 4 4 101.6 96.5 6.35 Example – Typical designation of an UNC thread • 1/4″ x 20 UNC UNF – Unified National Fine Threads UNF threads ANSI B1.1: Major Diameter Threads per inch Major Diameter Tap Drill Size Pitch (in) (tpi) (in) (mm) (mm) (mm) #0 – 80 80 0.06 1.524 1.25 0.317 #1 – 72 72 0.073 1.854 1.55 0.353 #2 – 64 64 0.086 2.184 1.9 0.397 #3 – 56 56 0.099 2.515 2.15 0.453 #4 – 48 48 0.112 2.845 2.4 0.529 #5 – 44 44 0.125 3.175 2.7 0.577 #6 – 40 40 0.138 3.505 2.95 0.635 #8 – 36 36 0.164 4.166 3.5 0.705 #10 – 32 32 0.19 4.826 4.1 0.794 #12 – 28 28 0.216 5.486 4.7 0.907 1/4″ – 28 28 0.25 6.35 5.5 0.907 5/16″ – 24 24 0.313 7.938 6.9 1.058 3/8″ – 24 24 0.375 9.525 8.5 1.058 7/16″ – 20 20 0.438 11.112 9.9 1.27 1/2″ – 20 20 0.5 12.7 11.5 1.27 9/16″ – 18 18 0.563 14.288 12.9 1.411 5/8″ – 18 18 0.625 15.875 14.5 1.411 3/4″ – 16 16 0.75 19.05 17.5 1.587 7/8″ – 14 14 0.875 22.225 20.4 1.814 1″ – 12 12 1 25.4 23.25 2.117 1 1/8″ – 12 12 1.125 28.575 26.5 2.117 1 1/4″ – 12 12 1.25 31.75 29.5 2.117 1 3/8″ – 12 12 1.375 34.925 32.75 2.117 1 1/2″ – 12 12 1.5 38.1 36 2.117 Example – Typical designation of an UNF thread • 1/2″ x 20 UNF FacebookXRedditLinkedInWhatsAppTelegramTumblrPinterestVkXingEmail Standard EN Sample 1 Sample 2 Full Description This Standard specifies the thread form, series, class, allowance, tolerance, and designation for unified screw threads. (In order to emphasize that unified screw threads are based on inch modules, they may be denoted unified inch screw threads.) Several variations in thread form have been developed for unified threads; however, this Standard covers only [Unified] UN and UNR [external threads only] thread forms. For easy reference, a metric translation of this Standard has been incorporated as Nonmandatory Appendix C. Nonmandatory Appendices A through E contain useful information that is supplementary to the sections of this Standard. Details Language(s)EnglishISBN9780791873090File Size2.5 MB Purchase Right after completing the purchase process, you will immediately get a digital copy of this standard which is: Not Locked Printable Multi-User $ 37.50 AI-generated AbstractUnified Inch Screw Threads (UN and UNR Thread Form) establishes standardized dimensions and tolerances for external and internal screw threads to facilitate interchangeability and promote safe mechanical assembly. The standard supersedes previous editions and incorporates user feedback and study data to address practical problems encountered in high-production environments. Key updates in this edition include revised tolerance classes and emphasis on the functional aspects of threads, ensuring compatibility with coatings and enhancing the ease of assembly. 100%(2)100% found this document useful (2 votes)1K viewsSaveSave ASME B1.1-2019 (3) For Later100%100% found this document useful, undefined