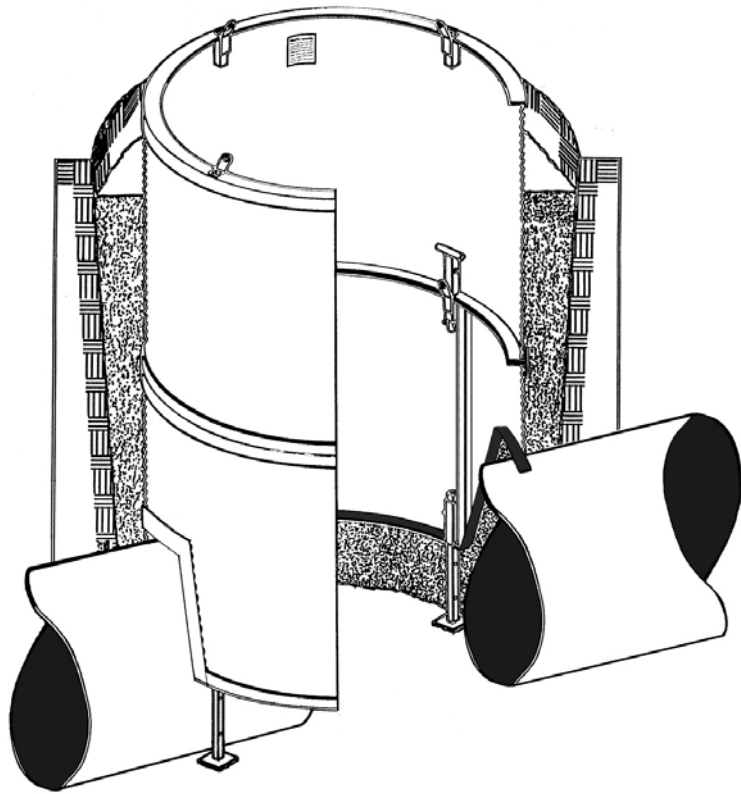


TABULATED DATA

MANGUARDS



SPEED  SHORE®

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WARNING

EXCAVATION PROCEDURES MAY BE VERY DANGEROUS

- A TRAINED *COMPETENT PERSON* SHALL: SUPERVISE ALL EXCAVATION OPERATIONS, ENSURE THAT ALL PERSONNEL ARE WORKING IN SAFE CONDITIONS, AND HAVE THOROUGH KNOWLEDGE OF THIS TABULATED DATA. THE *COMPETENT PERSON* SHALL HAVE THE AUTHORITY TO STOP WORK WHEN IT IS UNSAFE FOR WORKERS TO ENTER AN EXCAVATION.
- ALL PERSONNEL SHALL BE TRAINED IN CORRECT EXCAVATION PROCEDURES, PROPER USE OF THE PROTECTIVE SYSTEM AND ALL SAFETY PRECAUTIONS.
- EXCAVATIONS AND PROTECTIVE SYSTEMS SHALL BE INSPECTED AT LEAST DAILY AND WHENEVER THERE IS A CHANGE OF SOIL, WATER OR OTHER JOB SITE CONDITIONS.
- ALL LIFTING AND PULLING EQUIPMENT, INCLUDING CABLES, SLINGS, CHAINS, SHACKLES AND SAFETY HOOKS SHALL BE EVALUATED FOR SUITABILITY AND CAPACITY, AND SHALL BE INSPECTED FOR DAMAGE OR DEFECTS PRIOR TO USE.
- ALL INSTALLATION AND REMOVAL OF SHORING AND SHIELDING SHALL BE FROM ABOVE GROUND ONLY.
- DO NOT ALLOW PERSONNEL TO ENTER AN EXCAVATION THAT IS NOT PROPERLY SHORED, SHIELDED OR SLOPED.
- PERSONNEL SHALL ALWAYS WORK WITHIN THE SHORING AND SHIELDING. PERSONNEL SHALL NOT STAND ON THE EDGE OF AN UNSHORED EXCAVATION.
- ALL PERSONNEL SHALL ENTER AND EXIT EXCAVATIONS ONLY WITHIN SHIELDED OR SHORED AREAS.

SPEED SHORE'S "MANUFACTURER'S TABULATED DATA" IS A GENERAL SET OF GUIDELINES AND TABLES TO ASSIST THE *COMPETENT PERSON* IN SELECTING A SAFETY SYSTEM AND THE PROPER SHORING OR SHIELDING EQUIPMENT. THE *COMPETENT PERSON* HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY AND THE PROPER SELECTION AND INSTALLATION AND REMOVAL OF THE SHORING OR SHIELDING EQUIPMENT.

THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC EXCAVATION SAFETY PLAN, BUT SHALL BE USED BY THE *COMPETENT PERSON* TO SUPPLEMENT HIS TRAINING, HIS EXPERIENCE AND HIS KNOWLEDGE OF THE JOB CONDITIONS AND SOIL TYPE.



SPEED SHORE TABULATED DATA

1.0 SCOPE

- 1.1 Speed Shore's Tabulated Data complies with the O.S.H.A. standards as stated in the Code of Federal Regulations 29, Part 1926, Subpart P - Excavations, Section 1926.652(c)(2). This data shall only be used by the contractor's **competent person** in the selection of Speed Shore Manguards. The **competent person** shall be experienced and knowledgeable in trenching and excavation procedures, soil identification and in the use of Speed Shore Manguards.
- 1.2 All personnel involved in the installation, removal and use of Manguards shall be trained in their use and advised of appropriate safety procedures.
- 1.3 Table MG-1 is based upon requirements stated in CFR 29, Part 1926 and applicable portions of CFR 29, Part 1910. The **competent person** shall know and understand the requirements of those parts before using this data.
- 1.4 Whenever there is a variance between this Tabulated Data and CFR 29, Part 1926, Subpart P - Excavations, this Tabulated Data shall take precedence. Whenever a topic or subject is not contained in this Tabulated Data, the **competent person** shall refer to CFR 29, Part 1926, Subpart P - Excavations.
- 1.5 This data refers to the Code of Federal Regulations, 29, Parts 1910 and 1926. In states that have their own state O.S.H.A. refer to similar regulations in the current construction rules published by the state office of Occupational Health and Safety.
- 1.6 Table MG-1 shall be used only in excavations with soil conditions as noted. For other soil and excavation conditions and depths, site-specific engineered designs are required. Contact Speed Shore Corporation for assistance.
- 1.7 This Tabulated Data is applicable for standard products manufactured exclusively by Speed Shore and may only be used with Speed Shore manufactured products. Any modification of Speed Shore products not specifically authorized by Speed Shore Corporation voids this data.

2.0 DEFINITIONS (RE: CFR 29, Part 1926.32 Definitions) - RESTATED FOR EMPHASIS

- 2.1 1926.32 (F) "**competent person**" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees; and who has authorization to take prompt corrective measures to eliminate them.
- 2.2 1926.32 (p) "Shall" means mandatory.

3.0 SOIL CLASSIFICATIONS

- 3.1 In order to use the data presented in Table MG-1, the soil type, or types, in which the excavation is cut shall first be determined by the **competent person** according to the O.S.H.A. soil classifications as set forth in CFR 29, Part 1926, Subpart P, Appendix A.
- 3.2 Table MG-1 is also for use in Type C-60 soil (see 3.3 for definition).
- 3.3 Type C-60 soil is a moist, cohesive soil or a moist dense granular soil which does not fit into Type A or Type B classifications, and is not flowing or submerged. This material can be cut with near vertical sidewalls and will stand unsupported long enough to allow the vertical shores to be properly installed. The **competent person** must monitor the excavation for signs of deterioration of the soil as indicated by, but not limited to, freely seeping water or flowing soil entering the excavation around or below the Manguards. An alternate design for less stable Type C soil may be required where there is evidence of deterioration.
- 3.4 Water flowing into an excavation, from either above or below ground, will cause a decrease in the stability of the soil. Therefore, the **competent person** shall take action to prevent water from entering the excavation and promptly remove any water that accumulates in the excavation. Closer monitoring of the soil is required under wet conditions, particularly in the less cohesive (weaker) soil conditions. A



small amount of water, or flowing conditions may downgrade the soil classification to a less stable classification. A large amount of water, or flowing conditions will downgrade all soils to O.S.H.A. Type C. Speed Shore shoring and shielding systems may be used safely in wet conditions when the excavation is monitored by the *competent person*. Example: When repairing a leak in utility lines, it is often difficult or even impossible to keep water out of the excavation.

4.0 PRESENTATION OF INFORMATION

- 4.1 Information is presented in tabular form in Table MG-1 is for use in O.S.H.A. Type A, B and C soils, and for use in Type C-60 soil (see 3.3 for definition).
- 4.2 Table MG-1 is not considered adequate when loads imposed by structures or by stored material adjacent to the trench weigh in excess of the load imposed by 3 feet of soil surcharge. The term "adjacent" as used here means the area within a horizontal distance from the edge of the trench equal to the depth of the trench.
- 4.3 Using Table MG-1 after determining the soil type, the *competent person* determines the maximum depth the Manguard may be used.

5.0 ASSEMBLY

- 5.1 Manguards shall be inspected by a *competent person* before and after assembly.
- 5.2 All damage shall be evaluated and repairs made under the direction of a registered professional engineer. All missing or damaged components shall be replaced with genuine Speed Shore parts.
- 5.3 All lifting and pulling equipment, (including cables, slings, chains, shackles and safety hooks) used to handle Manguards or components shall be evaluated for lifting capacity, and inspected for damage or defects, prior to use, by experienced operators and shall meet O.S.H.A. requirements.
- 5.4 Tag lines or other approved safety devices shall be utilized to keep employees away from loads handled by lifting equipment.
- 5.5 All accessories shall be in place before using this Manguard.
- 5.6 Manguards may be stacked utilizing stacking socket and appurtenances providing the allowable designed depth rating for each Manguard is not exceeded in the Table MG-1.
- 5.7 All replaceable cutouts in the Manguards shall be filled with Speed Shore supplied cover panels when the block-outs are not being used.

6.0 INSPECTION

- 6.1 The *competent person* must evaluate the soils to assure the rated capacity of the Manguard is not exceeded by the lateral pressure of the soil. Soils shall be evaluated in accordance with Part 3.0.
- 6.2 The *competent person* shall monitor all phases of the assembly, installation and use of this product to evaluate and eliminate methods, which could endanger employees utilizing this product.
- 6.3 Daily inspections of the Manguard and accessories must be performed by the *competent person* and deficiencies corrected.
- 6.4 Inspections shall be conducted as necessary for hazards associated with: water accumulation, changing soil conditions, or changing site weather conditions.
- 6.5 Stacked Manguards shall be monitored to assure that each Manguard is secured to the one below it.

7.0 SAFETY SPECIFICATIONS

- 7.1 Employees shall be protected from loose or falling material. Manguards must always be used in a manner that loose or falling soil cannot enter over the top of the Manguard. Spoil piles must be kept back from the edge of the excavation at least 2 feet.
- 7.2 Employees shall not enter or exit the Manguard through unprotected areas and shall remain in the Manguard at all times while working.



- 7.3 Employees shall not be in or under a Manguard while it is being lifted or moved.
- 7.4 Bottom of the Manguard may be a maximum of 2 feet above the bottom of the trench if there are no signs of deterioration of the trench face below or at the end of the Manguard.
- 7.5 The sides of the excavation should be cut vertical and narrow to prevent lateral movement of the Manguards. The width of the excavation shall be no wider than the width of the Manguards plus 6 inches around the perimeter.
- 7.6 Water shall be prevented from entering the excavation and any water that does accumulate in the excavation shall be pumped out.
- 7.7 Contact Speed Shore for any non-typical use of Manguards.

8.0 EXAMPLE TO ILLUSTRATE THE USE OF TABLE MG-1:

Problem: A precast manhole 8' diameter is being set 16' deep in soil that has been classified by the *competent person* to be O.S.H.A. Type C soil. Stacking 2 identical 8 feet high Manguards is desired. Which Manguards may be used?

Studying Table MG-1 shows that a MG-10x8 is adequate to a depth of 24' in C-80 soil or a MG-10x8-RC-48/48/24 is adequate down to 20 feet deep in C-80 soil and may be used with the cutouts to straddle the pipe. Either of these 2 units may be used. The MG-10x8 may be stacked on the unit with the cut-outs. Please note 4 stacking pins will be required.

TABLE MG-1 MANGUARDS - MODELS

MODEL	CAPACITY P.S.F.	MAXIMUM DEPTH RATING FOR SOIL TYPES FEET					DIAMETER FEET		WEIGHT APPX. POUNDS
		A-25	B-35	B-45	C-60	C-80	OD	ID	
Standard MANGUARDS									
MG-06x4	2000	30	30	30	30	20	6.17	5.5	900
MG-06x8	2000	30	30	30	30	20	6.17	5.5	1300
MG-8.5x4	1900	30	30	30	30	20	8.67	8.0	1200
MG-8.5x8	1900	30	30	30	30	20	8.67	8.0	1700
MG-10x4	1800	30	30	30	30	20	10.17	9.5	1500
MG-10x8	1800	30	30	30	30	20	10.17	9.5	2200
MANGUARDS with Replaceable Cut-Outs (RC)									
MG-06x8-RC-24/24/18	1600	24	24	24	24	16	6.17	5.5	2000
MG-8.5X8-RC-40/40/24	1600	24	24	24	24	16	8.67	8.0	2600
MG-10x8-RC-48/48/30	1600	24	24	24	24	16	10.17	9.5	3100

- (1) If a specific model Manguards is not shown in Table MG-1, the competent person must refer to the Manguards certification to determine capacity and working depths. All other aspects of this tabulated data will apply to any Manguards not shown in Tables MG-1.
- (2) Weights are approximate.

