Section 4167. Steel Piles

4167.01 GENERAL REQUIREMENTS.

A. Steel H-Piles.
Furnish steel H-piles rolled from steel meeting the requirements of ASTM A 572/A 572M Grade 50 (345) with cross section dimensions meeting the requirements of ASTM A 6/A 6M for the section number designated. Only field welding will be allowed. Complete welding according to Article 2408.03, B.

B. Pipe Piles.

1. When pipe piles are allowed in the contract documents as an option to steel H-piles, furnish pipe piles of the dimensions shown, manufactured within the physical and chemical requirements of ASTM A 252, Grade 2 or 3. Furnish test results from at least one random sample taken from pieces furnished to the project. Ensure the chemical analysis ~~includes carbon,~~ indicates no more than 0.05% phosphorous~~, sulphur, and manganese~~.

2. Only field welds will be permitted, and only at air temperatures above 0°F (-18°C). Ensure all welding is done by welders certified by the Department. When welding, the surfaces of the pipe being welded, within 3 inches (75 mm) laterally and in advance of welding, must be preheated to a minimum of ~~400~~ 50°F (~~204~~ 10°C). Maintain this temperature during welding. Weld the joint with a prequalified AWS Joint B-U2a. For manual shielded metal arc welding, use an E701.8 electrode and for semi-automatic Flux Core Arc welding, use an E71T-X electrode. Use a backup ring of the same steel as that of the pipe.

C. Steel Sheet Piles.
Furnish steel sheet piles of the interlocking type (interlock type approved by the Engineer) with a section modulus no less than that specified. Meet the requirements of ASTM A 328/A 328M for piles and welding required thereon. Unless specified otherwise, furnish piling furnished with a web thickness no less than 3/8 inch (10 mm).

4167.02 PILE POINTS FOR STEEL H-PILES.

A. When required in the contract documents, use pile points for steel H-piles that are cast-in-one-piece steel meeting the requirements of ASTM A 27/A 27M, Grade 65-35 (450-240) or an approved equal. Provide the points with sufficient flange and continuous web vertical back-ups to assure proper alignment and fitting to the piles. Ensure the pile points provide full bearing for the piles and are attached to the piles to ensure full transmission of the driving energy to the points.

B. The manufacturer is to submit detail drawings of pile points showing material, weight (mass), and dimensions for the Engineer's approval. Approved pile points are listed in Materials I.M. 467.02.