

PART VI**Appendix U****Volume Fraction of Reinforcement and Types of Steel Wire Meshes
Used in Ferrocement****U.1 Calculation of Volume Fraction of Reinforcement**

The volume fraction of reinforcement in a ferrocement section can be readily calculated if the density of the mesh material and the weight of mesh per unit area are known.

For ferrocement section reinforced with expanded metal mesh, the volume fraction of mesh reinforcement may be calculated from the following relationship.

$$V_f = \frac{\text{Volume of mesh}}{\text{Volume of ferrocement section}} = \frac{\omega_m N}{\gamma_m h} \times 100 \text{ per cent}$$

For ferrocement reinforced with square or rectangular mesh, the volume fraction of mesh reinforcement may be calculated from the following relationship:

$$V_f = \frac{N \pi d_b^2}{4 h} \left(\frac{1}{D_t} + \frac{1}{D_l} \right) \times 100 \text{ per cent}$$

Where,

N	=	number of layers of mesh reinforcement
d_b	=	diameter of mesh wire
h	=	thickness of ferrocement
D_t	=	centre to centre spacing of wires aligned transversely in reinforcing mesh, mm
D_l	=	centre to centre spacing of wires aligned longitudinally in reinforcing mesh, mm
ω_m	=	weight of mesh per unit area, N/mm ²
γ_m	=	unit weight of steel, N/mm ²

U.2 COMMON TYPES AND SIZES OF STEEL MESHES USED IN FERROCEMENT

Type	Shape	Fabrication	Mesh Size*	Wire Gauge*	Wire Spacing (mm)	Wire Diameter or Sheet Thickness (mm)
Wire Mesh	Square	Woven or Welded	$\frac{3}{4} \times \frac{3}{4}$	No. 16	19.0	1.60
			2 x 2	No. 19	13.0	1.00
		Welded	3 x 3	No. 22	8.5	0.72
			4 x 4	No. 23	6.4	0.64
	Rectangular	Welded	1 x 1	No. 14	25.0	2.00
		Welded	2 x 1	No. 14	50 x 25	2.00
		Twisted	1	No. 18	25.0	1.20
			1	No. 20	25.0	0.88
Expanded Metal Mesh	Diamond	Slit and Drawn	$\frac{1}{2}$	No. 22	13.0	0.72
				Gauge No. 18		1.00
				Gauge No. 20		0.76
				18 N/m ²		0.58

*American wire gauge

PART VII**Chapter 1****Constructional Responsibilities and Practices****1.1 Introduction**

This part of the Code provides the minimum requirements for safe constructional operations, constructional planning, management and practices in buildings; as well as for storage, stacking and handling of materials and resources used in buildings. It describes precautionary measures to be adopted to ensure the safety of public, environment and infrastructure, property, workmen, materials, services, plant and equipment. It also covers guidelines relating to maintenance management, repairs, retrofitting and strengthening of buildings.

1.2 Scope

The regulations stated in this part cover the constructional responsibilities and practices in building sites; safe storing, stacking and handling of materials, equipment and other resources; and safety of personnel during construction operations. The provisions of this part shall apply to all construction operations viz. erection, alteration, repair, removal or demolition of buildings and structures.

Nothing herein contained shall be construed to nullify any rules, regulations, safety standards or those contained in the various act of the Government of Bangladesh, statutes governing the protection of the public or workers from any hazard involved in manufacturing, mining and other processes and operations which generate toxic gases, dust or other elements dangerous to the respiratory system, eye sight or health.

1.3 Terminology

This section provides an alphabetical list of the terms used in and applicable to this part of the Code. In case of any conflict or contradiction between a definition given in this section and that in any other part, without prejudice to provisions arising from laws, statutes and recourses provided under such laws, statutes and covenants of GOB and trade bodies. The meaning provided in this part shall govern for interpretation of the provisions of this part. References shall be made to other part of this Code for terms not defined in this section.

AUTHORITY Same as defined in Chapter 2 Part 1.

AUTHORIZED OFFICER Same as defined in Chapter 2 Part 1.

BLAST AREA The area in which danger may arise during or prior to demolition including the potential area affected by preparation, handling and use of explosives.