

14

FLOORING

14.1 INTRODUCTION

The job of protecting slabs of roofs on the different floors in building and providing suitable finish of floor surfaces is known as flooring. There are many types of floors according to their uses, economy and required level of finishing.

14.2 OBJECTIVES

After reading this lesson you will be able to:

- explain types of flooring;
- differentiate among different process of flooring;
- describe reasons for laying panels on ordinary floors of cement;
- provide explanations for grinding of special types of floors.

14.3 PRECAUTION BEFORE FLOORING

Before constructing the flooring, levelling should be done and marking should be done on wall at 30 cm above from required level. For this purpose spirit level or mercury level should be used. For better accuracy, water level used by mason (mistry), should not be used. Due to more length of pipe and friction inside the pipe, results are not accurate. One should use long wooden patty while making floors so that floor surface can be flat.

14.4 LAYING OF SUBGRADE

In some places concrete is used before flooring. This concrete is known as subgrade. The places where flooring is done directly on soil, surface should be rammed with the help of wooden hammer, so that the surface should not be settled down. If concrete is used after 24 hours, cement slurry (2 kg cement per square meter) should be laid and then flooring is done. If this concreting is done on ground it is known as base concrete. If it is done on RCC slab, it is known as kusson of size 100 mm and 40 mm respectively.

14.5 TYPES OF FLOOR

1. Bricks or interlocking tiles flooring
2. Cement concrete floor
3. Marble chips or crazy marble flooring
4. Ready made marble tiles flooring
5. Glazed tiles flooring
6. Kota stone, Agra stones etc stone flooring
7. Wooden flooring

14.5.1 Bricks or interlocking of tiles flooring

High quality materials should be used. If mortar is not used or even subgrade in lower surface, thick layer of sand is spread, and joints with space 6 mm wide are filled with sand.

Normally brick flooring is done as harry bonding in which joints are not continuous.

14.5.2 Cement concrete flooring

Monolithical cement concrete flooring

Due to technical reason any flooring of cement concrete should not be laid together. In this type of flooring, the surface is divided into rectangular panels. Alternate panels are laid first. Before concreting in panels, cement slurry is used.

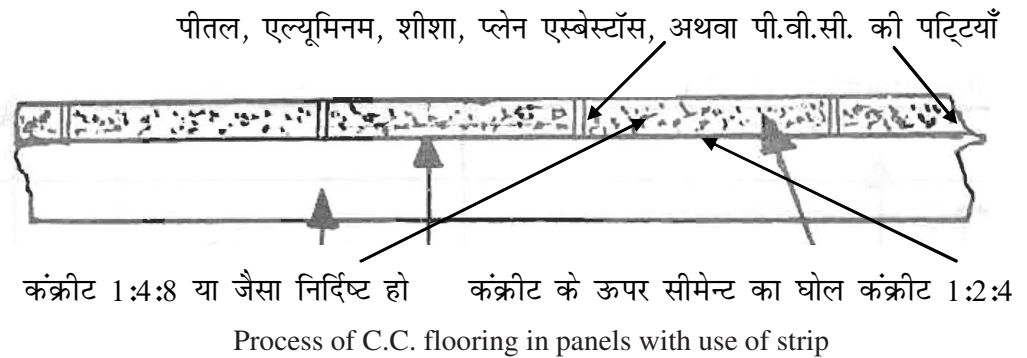


Fig. 14.1: Cement Concrete floors

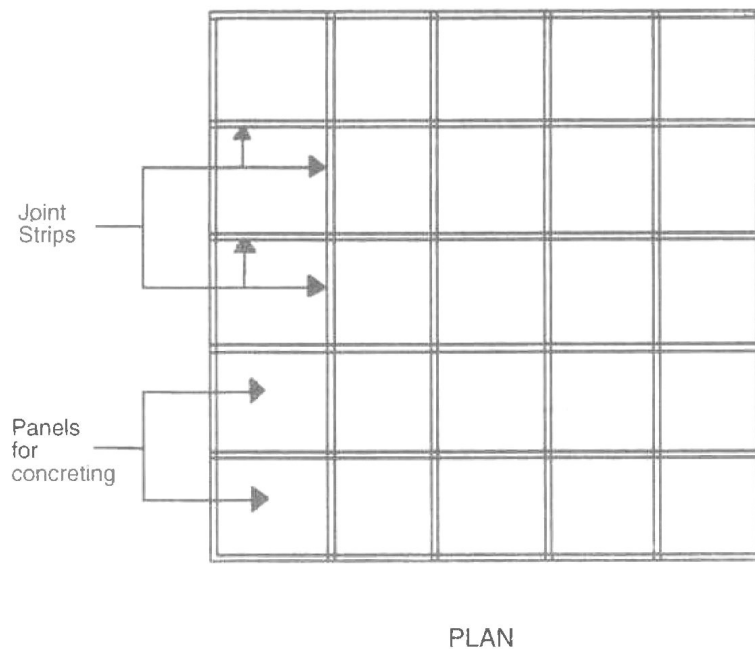


Fig. 14.2: Planning of flooring

Where this type of flooring is laid, first surface is compacted with wooden hammer and then 10 cm thick sand layers is spread. Then after watering and compaction, cement flooring laid.

Flooring is laid in two parts, upper portion of size 10 mm is known as topping made of cement and sand. After levelling with the help of a straight edge steel trowel is used for smoothing and finishing its top surface. Dry cement or mortar should not be used if some water comes at surface. Because this layer may be stripped out. The surface is then properly cured for a period of 14 days.

Non monolithic flooring in two layers:- In this method lower concrete layer of **1: 2:4** and upper layer of **1:2** ratio of cement and sand mortar of 5 mm to 10 mm is made. In this polish can be done later.

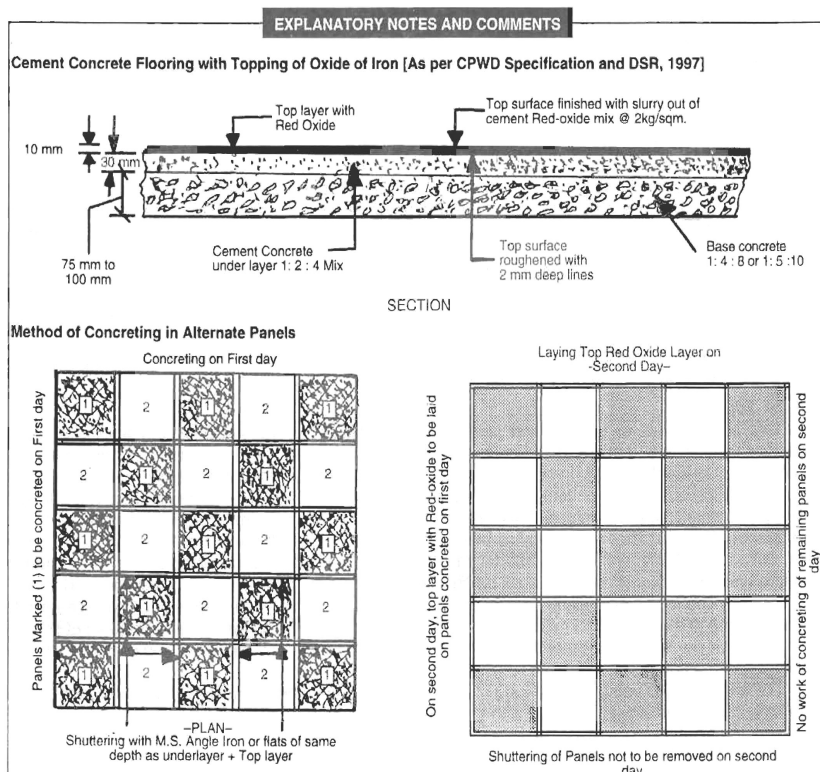


Fig. 14.3

Heavy duty concrete flooring: This type of flooring is made for railway platform or where heavy machines are used. **In this, flooring base is 50 mm and total thickness is 125-150 mm.**

14.5.3 Marble chips or crazy marble flooring

There are three parts of flooring: Base concrete, under layer and topping. This types of flooring is just like the cement concrete, except that toping layer is made of marble chips and cement of ratio 1: 1 ½ or 1: 2. To avoid cracks, partitions are made of not more than 25 gm size. Lower layer made of 30 to 40 mm size aggregate of 1: 2: 4 cement sand and aggregate. Glass or aluminium stripes are used for partition from lower layer to upper top layer.

The thickness of top layer is 10 mm and it is made of marble powder and cement in 1: 3 ratio and then powder and marble chip in 1: 2 ratio.

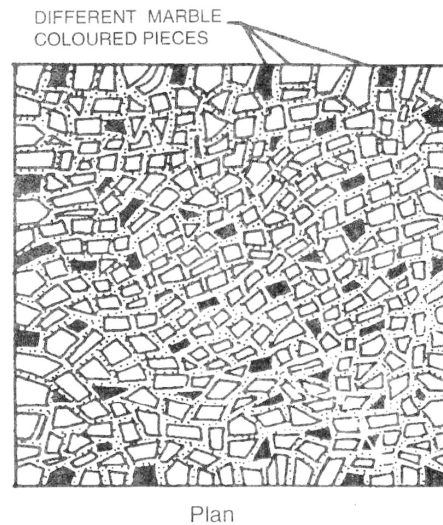


Fig 14.4: Crazy marble flooring

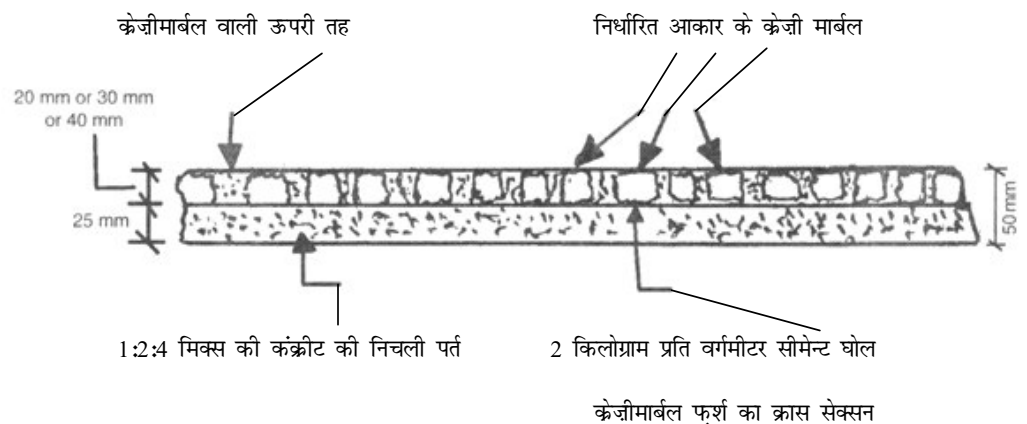


Fig. 14.5: Method of crazy marble flooring

Curing: Floor is left in atmosphere for 12 to 18 hrs, and cured for more than 4 days by water filled in small partitions.

Grinding and Polishing: After seven days of flooring is laid, grinding is done. Grinding stones are available in different grade. At the end polishing is done.

14.5.4 Readymade marble tile flooring

Readymade marble tiles are available in market. For this flooring, firstly subgrade is prepared and

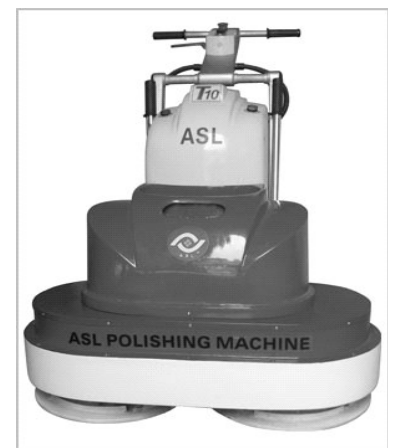


Fig. 14.6: grinding machine

then on the mortar, tiles are laid. Mortar surface is prepared with 1:6 ratio of cement and sand. The thickness of mortar is 20 mm.

Laying of marble tiles: Before laying the tiles thin paste of cement slurry (4.5 kg/m^2) is spread and tiles are laid flat over it by gently pressing them into the bedding mortar with the help of wooden mallet till leveled surface is obtained. The flooring is then cured for seven days, then grinding and polishing is done in the same manner. These days glazed tiles are commonly used in houses.

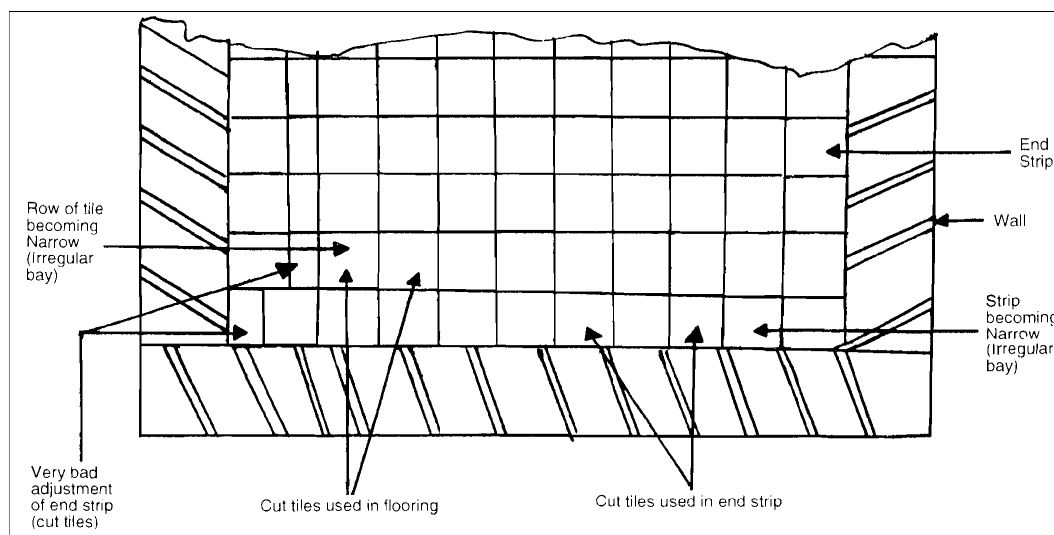


Fig 14.7: Laying of marble tiles

14.5.5 Glazed tiles flooring, skirting and dedo

Glazed tiles, skirting and dedo are made on sub grade with thickness 13 mm by cement and sand in the ratio of 1: 3. These are following types of glazed tile, vitrified, semi vitrified, or normal glazed tiles.

Vitrified tiles are of 10-12 mm thick in which upper layer is of 3-4 mm having long durability and shining whereas semivitrified are of medium quality.

Laying of tiles: After laying mortar, tiles are laid and pressed by wooden mallet as in marble tile flooring.

Before using, tiles should be clean and dried.

Skirting and dedo are laid in same manner. In the end all joints are filled with white cement pigment of tile colour.

14.5.6 Kota Stone Flooring

This is available in size of 600 × 600 mm which after dressing becomes of size 500 × 500 mm and thickness 25-40 mm.

Flooring is done in same manner as in tiles flooring except bed is made in 1: 4 ratio and bed thickness of 40 mm.

Table 14.1: Requirement of cement for flooring work

Types of flooring	Cement requirement/bag
IPS 1:2:4 (40 mm thick)	0.34
IPS 1:2:4 (25 mm thick)	0.25
IPS 1:2:4 (50 mm thick)	0.40
Kota stone (25-30 mm)	0.14
White glazed tile	0.18/m ² + 0.05/m ² (for white cement paste)
Relaying of marble/Mosaic/moargar tile 1: 3 (thickness 13 mm)	0.176
Relaying of marble/mosaic 1:3 (13 mm)	0.28
Kota Stone 1: 4 (20 mm)	0.3
Tarozo 1 : 3 (19 mm)	0.38
Mosaic 1: 6 (20 mm)	0.26
IPS 1: 4 (20 mm)	0.28

14.6 WHAT HAVE YOU LEARNT

- Types of floors
 - Methods of laying different types of floors
 - Reasons of position in normal cement flooring.
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- Importance of grinding in flooring.

14.7 TERMINAL QUESTIONS

1. How many types of flooring are generally used?
 2. Describe various methods of flooring.
 3. Why grinding is required in flooring?
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