

# Cost Comparison & Effectiveness of Mivan Formwork over the Conventional Formwork

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**Abstract**—The aluminium formwork system was developed by Malaysian Company and that's why the aluminium formwork technology is named after it. Mivan is new construction technology upcoming for successful completion of mass housing project in India. In this project we have discussed about cost comparison of mivan technology with conventional construction technology. The Mivan technology is absolutely fine with cost, quality and time saving as compare to conventional.

**Keywords:** Aluminium formwork; Sheathing: Conventional formwork.

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## I. INTRODUCTION

The Mivan Technology System was created by Mivan Company Ltd from Malaysia late 1990s as a framework for building mass lodging venture in creating nations. The units were to be of thrown set up cement, with burden bearing dividers utilizing a formwork of aluminium boards. To be raised by the hundreds, of a tedious outline, the framework guaranteed a quick and prudent technique for development. The solid surface completion delivered with the aluminium frames permits accomplishment of a superb divider complete without the requirement for broad putting. This is one of the frameworks distinguished to be especially reasonable for Indian conditions for mass development, where quality and rate can be accomplished at abnormal state.

### A. MIVAN FORMWORK

#### 1. Requirement of Mivan Formwork

The Mivan formwork is comprised of an aluminium amalgam. While Construction is in procedure the formwork should bear, other than its own particular weight, the heaviness of wet cement, the live load because of work, and the effect because of pouring cement and laborers on it. The vibration brought on because of vibrators used to smaller the solid ought to likewise be taken consideration off. Hence, the outline of the formwork considering its necessities is a fundamental part amid the development of the building. The Mivan Formwork ought to have the capacity to take a live load including the effect around 370kg/m<sup>2</sup>. It is be that as it may, normal to work with a little calculate of wellbeing the configuration of formwork. The surfaces of formwork ought to be wearing such a way, to the point that after diversion because of weight of cement and fortification, the surface stays level, or as coveted by the architect.

The sheathing with full live heap of 370 kg/m<sup>2</sup> ought not redirect more than 0.25 cm and the joists with 200kg/m<sup>2</sup> of live load ought not divert more than 0.25cm. Maintaining the Integrity of the particulars. The particular way of the mivan formwork ought to permit simple altering and evacuation of

formwork and the development can continue quickly with almost no deviation in dimensional resistances. Further, it ought to is entirely adaptable and can be effectively adjusted for any varieties in the format.

#### 2. General specification of Mivan Formwork

The essential component of the Mivan Formwork is the board, which is an expelled aluminium rail segment, welded to an aluminium sheet. This creates a lightweight board with an amazing solidness to weight proportion, yielding insignificant diversion under solid stacking. Boards are made in the size and shape to suit the prerequisites of particular ventures. The boards are produced using high quality aluminium composite with a 4 mm tough skin plate and 6mm thick ribbing behind to solidify the boards. Prior the boards were utilized to produce just in plants in Europe and South East Asia yet in later the formwork segments are begun fabricating in India too e.g. Universe Construction Machineries And Equipments Pvt. Ltd. When they are amassed they are subjected to a trial erection keeping in mind the end goal to dispense with any dimensional or on location issues. The formwork parts are tough they can be utilized tediously up to 200 times. It is light weighted so truly difficult work is killed, the heaviest parts are of 25 kg, and a labour can without much of a stretch lift it.

## II. COST COMPARISON

By adopting Mivan technology in the project not only it gives the better quality of construction and but also increases the speed of construction and reduces the cost since some of the construction activities are completely eliminated and others are reduced to an extent. This project includes the cost comparison of conventional construction with Mivan Technology of construction. The following comparison is from the data acquired at *Ajmera Bhakti Park, Sector I and II, Wadala (E)*.

### A. Details about the structure

Sr. No	Parameter	Cost By Conventional Technology	Cost by Mivan Technology	Cost Saving
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1	Shuttering after repetitions	Wooden Materials = Rs. 88.50 /sq.m M.S. Materials = Rs. 100.00 / sq.m	Rs. 83.8 / sq.m	Rs. 104.63 /sq.m
2	Concreting	Rs. 1400 / sq.m	Rs. 1505 / sq.m	Rs. -105./ Sq.m
3	Reinforcement	Rs 1480.00	Rs. 2115.20	Rs - 635.20/Sq.m
4	Brickwork	Rs 484.00	Rs.0.00	Rs 480/Sq.m
5	Plaster	Rs 700	Rs 0.00	Rs 700/sq.m
			Total cost of saving	Rs 584.43/Sq.m

**Table 1: cost comparison between construction by conventional and mivan technology and mivan technology**

III. FEEDBACK

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