



# MCR - Roofing System



## Technical Data

Building system	Roofing
Size of tile	500 x 250 x 10 mm
Tiles per m <sup>2</sup>	12.5
Weight per tile	3.0 kg
Weight per m <sup>2</sup> of installed tiles	37.5 kg
Production capacity	250 tiles / machine / day (depends on number of moulds used)
Resistance to earthquakes	Good
Resistance to typhoons	Satisfactory
Resistance to rain	Good
Resistance to insects	Good
Climatic suitability	All climates
Stage of experience	Mature technology
Production costs of tiles per m <sup>2</sup>	Rp. 26,000
Production costs of system per m <sup>2</sup>	Rp. 90,000 (timber)
Durability	15-20 years

## Short Description

- The roofing system consists of the roofing cover, which are MCR (Micro Concrete Roofing) tiles, and the roofing substructure. The substructure can be made of timber or metal.
- There are 2 types of substructure: Single Leaf Roofing and Double Leaf Roofing
- The roofing system can be used for lean-to roofs or gable roofs



## Optional Types

### MCR with Single Leaf Roofing:

- This is the simplest and cheapest method of MCR roofing



### MCR with Double Leaf Roofing:

- This is a more sophisticated method of MCR roofing, using an inner leaf along the roof slope
- This can be fixed from the inside onto the rafters and forms a sloped ceiling
- The space between the tiles and the ceiling is ventilated by special openings or simply by the gaps between the tiles



## Advantages

### MCR with Single Leaf Roofing:

- Inexpensive
- Simple construction
- Maintenance is easy from the inside
- Control of leakage is easy

### MCR with Double Leaf Roofing:

- Improved thermal performance
- Dust, insect proof
- Moderate wind proof
- Proper surface from the inside

## Disadvantages

### MCR with Single Leaf Roofing:

- Relatively poor thermal insulation
- Not air and insect proof

### MCR with Double Leaf Roofing:

- Higher costs
- Leakage cannot be easily detected from the inside
- Changing tiles from the inside is difficult
- Uncontrollable space between tiles and ceiling (rats, etc.)

## Limits of Application

- Regular and good maintenance required (suitable rather for private than public buildings)
- Solid substructure required (metal structure); Most damages to MCR tiles on roofs can be tracked down to faults in the roof structure, and in the way the tiles were placed and fixed
- If chosen wooden substructure, good quality timber should be used

Caption:

Description:

Dimensions: 425 x 600

aperture: 0

credit:

camera:

caption:

created\_timestamp: 0

copyright:

focal\_length: 0

iso: 0

shutter\_speed: 0

title:

orientation: 0

