

This Guide...

This waterproofing Systems Selector Guide is BituNil's systematic approach to help architects and designers in specifying the right system through a simple process of reaching a particular System Reference that leads to the required roofing/waterproofing system with all its details. All systems included in this Guide are designed in compliance with international standards and codes of practice.

Using This Guide

1- Sections of this Guide

The Applications in this Guide are classified into six main sections, these are:

- Section 1: **Roofing Systems - Concrete Deck Applications**
- Section 2: **Roofing Systems - Metal Deck Applications**
- Section 3: **Roofing Systems - Wooden Deck Applications**
- Section 4: **Waterproofing Systems - Below Grade Applications**
- Section 5: **Waterproofing Systems - Civil Engineering Applications**
- Section 6: **Waterproofing Systems - Miscellaneous Applications**

2- Finding The Right System Reference

Based on the project's mandates the Guide user may follow the instructions below in order to pinpoint the applicable Systems Reference:

- Define whether the application belongs to any of the sections mentioned above.
- Determine additional system conditions and requirements, throughout other levels (Columns) of the Guide in order to reach the required System Reference e.g. "RC 10"
- Through the Systems Reference the user can obtain:
 - a- System Design Sheet.
 - b- Standard Construction Details.
 - c- Drop-In Specifications.

3- System Design Sheet

The System Design Sheet is a single sheet that contains all the information on system components in isometric presentation with all technical considerations on the front side, and system engineering drawing on the back side.

4- Standard Construction Details

the Standard Construction Details is annexed to this System Selector Guid to show construction details relevant to each waterproofing system. The Construction Details are classified into six main groups:

- 1- Roof Drains.
- 2- Expansion Joints.
- 3- Penetrations.
- 4- Terminations.
- 5- Special Details.
- 6- General Details.

Each of the Construction Details has an indication to the relevant Systems Reference.

5- Drop-In Specifications

The Drop-In Specifications suggests a drafting for specifications of Roofing and Waterproofing including proposed Schedule Of Workers.

- For System Specifications and Schedule Of Workers details contact the Marketing Services Division at BituNil.

GLOSSARY & DEFINITIONS

The user of this Guid may refer to the definitions listed below that explain the meaning of the technical abbreviations and terms used in the Guide:

MBM Waterproofing System

Waterproofing systems applied using Modified Bitumen Membranes.

Accessible Roof

Roofs designed for regular use by building occupants such as the case in residential buildings.

Non Accessible

Roofs designed only for maintenance or no traffic such as the case in hospitals, office bulidings and factories.

Protected System

The waterproofing membrane is not the final layer.

Exposed System

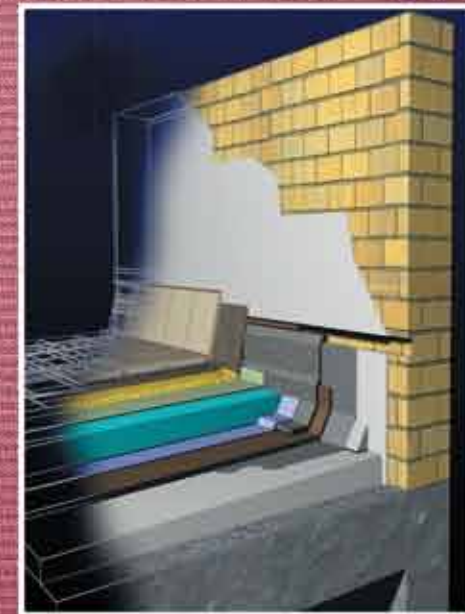
The waterproofing membrane is the final layer with self protection.

Inverted Roofing Membrane Assembly (I.R.M.A)

The waterproofing membrane is placed below the thermal insulation.

Conventional Roofing System

The waterproofing membrane is placed above the thermal insulation.



System Selector Guide

Headline
PRINTING & DESIGN

BituNil Technical Support Services

BituNil can carry out, upon request, design, specification and detailing works for projects' particular waterproofing applications.

BituNil offers all system drawings and construction details in soft format on floppy discs and compact discs.

1	ROOFING SYSTEMS CONCRETE DECK APPLICATIONS						
DECK TYPE	DESIGN	USE	FINISH	LAYERS ⁽¹⁾	PROTECTION	ASSEMBLY	SYSTEM REFERENCE ⁽¹⁾
CONCRETE	Flat Roofs	Accessible	Protected	1+1	Tiles, Marble Or As Specified	INVERTED	RC10
						CONVENTIONAL	RC11
						NON-INSULATED	RC12
		NON-Accessible	Protected	1+1	Gravel, Conc, Pavers Or Slabs (Or A Combination)	INVERTED	RC20
					Concrete Slab/ Screed With Joints	CONVENTIONAL	RC21
						NON-INSULATED	RC22
	Pitched Roofs	NON-Accessible	Exposed	2	MBM Self-Protected Membrane	INSULATED	RC30
						NON-INSULATED	RC31
			Protected	1+1	Glaz Roof Tiles	INSULATED	RC40
						NON-INSULATED	RC41
			Exposed	2	MBM Self-Protected Membrane	NON-INSULATED	RC50

2	ROOFING SYSTEMS METAL DECK APPLICATIONS						
DECK TYPE	DESIGN	USE	FINISH	LAYERS ⁽¹⁾	PROTECTION	ASSEMBLY	SYSTEM REFERENCE ⁽¹⁾
METAL	Low Slope	NON-Accessible	Protected	1+1	Gravel, Conc, Pavers Or Slabs (Or A Combination)	INVERTED	RM10
					Concrete Slab/ Screed With Joints	CONVENTIONAL	RM11
			Exposed	2	MBM Self-Protected Membrane	NON-INSULATED	RM20

3	ROOFING SYSTEMS WOODEN DECK APPLICATIONS						
DECK TYPE	DESIGN	USE	FINISH	LAYERS ⁽¹⁾	PROTECTION	ASSEMBLY	SYSTEM REFERENCE ⁽¹⁾
WOOD	Pitched Roofs	NON-Accessible	Exposed	2	MBM Self-Protected Membrane	INSULATED	RW10
						NON-INSULATED	RW11

4	WATERPROOFING SYSTEMS BELOW GRADE APPLICATIONS				
SYSTEM APPLICATION	DESIGN	CONDITIONS	LAYERS ⁽¹⁾	SYSTEM	SYSTEM REFERENCE ⁽¹⁾
FOUNDATIONS	FOOTINGS & SLAB-ON-GRADE	AT GROUND LEVEL DRY OR DAMP SITES	-	LIQUID APPLIED BITUMEN ON FOOTINGS	UF10 ⁽³⁾
		PARTLY BELOW GROUND LEVEL SITES CLOSE TO WATER TABLE	1	SINGLE LAYER MBM MEMBRANE SYSTEM	UF11 ⁽³⁾
		BELOW GROUND LEVEL STRUCTURES BELOW WATER TABLE	2	MBM MEMBRANE SYSTEM	UF12 ⁽³⁾
	RETAINING WALLS	AT EARTH DIFFERENT LEVELS IN LANDSCAPING AND ROADS APPLICATIONS	1+1	MBM MEMBRANE SYSTEM DRAINAGE SYSTEM OPTIONAL	UR10
UNDERGROUND STRUCTURES	BASEMENTS	SITES WITH FREE SPACE AT BOUNDARIES APPLICATION ON STRUCTURAL CONCRETE	2	MBM WATERPROOFING TANKING SYSTEM	UB10
		SITES WITH LIMITED SPACE AT BOUNDARIES APPLICATION ON MASONRY OR DIAPHRAGM WALL		MBM WATERPROOFING REVERSED TANKING SYSTEM	UB11
	WATER RETAINING STRUCTURES	SWIMMING POOLS & DOMESTIC TANKS APPLICATION ON STRUCTURAL CONCRETE	2	MBM WATERPROOFING TANKING SYSTEM	UW10
	VIA DUCTS	PROTECTED CONCRETE CABLE & SERVICE DUCTS	1+1	MBM CONTINUOUS TANKING SYSTEM	UD10

5	WATERPROOFING SYSTEMS				
Civil Engineering Applications					
SYSTEM APPLICATION	CONDITIONS	LAYERS ⁽¹⁾	SYSTEM	SYSTEM REFERENCE ⁽¹⁾	
BRIDGE DECKS	COVERED WITH ASPHALT WEARING COARSE	1+1	MBM WATERPROOFING BRIDGE DECK SYSTEM	CB10	
UNDER-PASSES	STRUCTURE NEAR OR BELOW WATER TABLE	2	MBM WATERPROOFING TANKING SYSTEM +ADDITIONAL MBM PROTECTION FOR RC RAFT	CT10	
WATER STORAGE IRRIGATION & CANALS	WATER STORAGE ON COMPACTED EARTH OR CONCRET SECTIONS	1+1	MBM LINING SYSTEM INTERNAL APPLICATION	CL10	
	CANALS ON CONCRETE SECTIONS	1+1	MBM LINING SYSTEM INTERNAL APPLICATION	CL11	

6	WATERPROOFING SYSTEMS				
	Miscellaneous Applications				
SYSTEM APPLICATION	CONDITIONS	LAYERS ⁽¹⁾	SYSTEM	SYSTEM REFERENCE ⁽¹⁾	
WET & MECHANICAL ROOMS	AREAS WITH HUMID & WET CONDITIONS	1+1	MBM WATERPROOFING WET ROOMS SYSTEM	MW10	
ROOF GARDENS	CULTIVATED AREAS ON CONCRETE DECKS & PLANTER BOXES	2	MBM WATERPROOFINGROOF GARDEN SYSTEM	MG10	
CAR PARKS (MULTI-STOREY)	COVERED WITH REINFORCED CONCRETE SLABS	1+1	MBM WATERPROOFING PARKING DECK SYSTEM	MP10	
FACADES DAMP-PROOFING	CLADDED FACADES MECHANICALLY FIXED CLADDING	1	MBM SELF-ADHESIVE MEMBRANE SYSTEM	MF10	

(1) Layers: 1= One Layer System / 1+1= One Layer System with optional Base Layer / 2= Double Layer System Recommended.
 (2) System Reference: Use the Selected System Reference to find the applicable Standard Construction Details, specs and B.O.Q for the same System.
 (3) For Systems: UF10, UF11 & UF12, slab on grade is protected by a layer(s) of Modified Bituminous Membrane.

