Combo Roofing System
Prologue – the doorway

Al Haiel, a major dealer and service provider of water proofing, damp proofing, PVC and EPDM proofing and flooring materials such as bituminous membranes, bitumen, compounds and flooring products, bid the finest creations ever.

Our specialized services include Bituminous waterproofing to protect residential and commercial buildings, Basement waterproofing to prevent water from entering the basement of a house or building, Liquid roofing by application of a specialist liquid roof coating suiting all types of roofs such as flat, pitched or domed and Damp proofing applied to building foundation walls to prevent moisture from passing through the walls into the interiors. EPDM rubber foaming products have high seasonal and heat endurance capabilities. PVC membranes are puncture resistant, flexible and chemical resistant with exceptional durability.

Al Haiel brings in the best of services in the industry assuring the class with a strong presence in MENA region.

Separation Layer
The separation layer acts as a semi barrier between the coating and screed, as direct contact to a rigid layer may reduce the elastomeric properties of the coating and lead to cracking.

Protection Screed
This is the rigid protective course that keeps the underlying layers from direct exposure to atmospheric & climatic factors and also from direct loads that may occur due to overlying structures or any kind of possible traffic. It also helps in attaining the right amount of slopping for the roof. The joint between the compartments are packed using Back-Up Rods and the voids are sealed using joint sealants thoroughly as these joints are one of the major points of weakness in the protection layer.

Weather Coating
This is the final most layer applied to the system. It consists of liquid coating comprising of materials which safeguard the underlying layers from the harmful U.V Rays and heat Sun. This Layer is responsible for avoiding the cracking of the screed due to thermal expansions and contractions.

Finishing Works
Angle fillet
The corners created at the meeting point of the horizontal and vertical surfaces are always identified as weak sports in water proofing. Water may seep downwards through these points. In order to avoid this weakness in the structure we make angle fillets. They also help in providing good runoff water flow on roofs. Apart from that it ensures that ne weak corners are formed during weather coating.

Joint Sealant And Spec Cord
The joints lefts unattended after the removal of the top edges of the filler board are alsoaccounted as weak sports. They allow water seepages as well as affect the integrity of the surface and the slopping. These joints are packed with spec cords and then the remaining space is sealed tight using joint sealants it may done before or after the top coat as per the site specification.
Method Of Application for Roof Waterproofing System (Combo Roofing System)

The Combo Roofing system consists of multiple layers. Each layer has a distinguished purpose of its own and is thus mandatory for the 100% efficiency of the system.

The following step-by-step segregated representation of the system with reference to the function of each layer.

**Surface Preparation**
The surface of strata to be waterproofed must be free from all kinds of oils & Chemicals. After making sure that the horizontal surfaces, edges & corners are clean the skirting area is protected by using polythene sheet so as to keep it from being pitted by the jet of the sprayer.

**Polyurethane Foam**
The polyurethane foam is prepared by the mixing of polyol with isocyanate in the foam machine. This mixture is then sprayed onto the surface layer after layer until the desired thickness is obtained. A minimum setting period is maintained between the layers so as to get maximum bonding between them. It is a very delicate process and requires skilled labour.

**Protection Layers**
The insulating properties of the foam can be compromised by moisture vapour. The coating needs to be able to protect the foam from a build-up of this vapour, so that it won’t reach the dew point. Another major hindrance to the PU Foam is the UV Rays from the sunlight. In order to outgrow from these problems the following protective coating are provided.

**Rubberized Coating**
The rubberized coating assists the foam at the time of expansion and contraction with respect to atmospheric temperature change and keeps it from damages due to elongation.

Al Haiel – the persona

Al Haiel has a completely professional team on and off the site. Education and experience stand to be the backbone of our company ensuring the quality and qualification of every single member of our team contributing to and striving for excellence: Each of our associate possess about eight to ten years experience in the field.

Our efforts persist and in turn give off new product variants and executing techniques providing our customers with the best state of the art service facility. A wide range of waterproofing membranes and liquid application options are offered to ensure that our clients get the every bit of what they deserve as a comprehensive package while dealing with us.

We are keenly committed in giving the best of our efforts to each one of our assignments, whether big or small.
Foam Roofing
• Polyurethane Foam is a Spray applied, rigid monolithic layer that has been in use as a roofing and insulation material for over 45 years.
• It is fully bonded to roof slab and is impermeable to water.
• It can be availed in different densities by adjusting the mix proportions, as per the specification and site requirement.
• Foam roofing produces energy savings of 30% or greater when compared to the alternative roofing systems. The cost of the roof can be easily recovered in less than 5 years. simply through these energy savings alone!

The Combo Roofing System
Totally new approach towards waterproofing compared to the present systems, it’s a Hybrid System compiling of all the previous concepts.
• Spray applied. quick-setting foam system comprising of 5 layers of protection from water leakage problems & providing Thermal Insulation.
• This Monolithic system can carry loads of up to 2.5 tons per m2. A System that reduces the Relative Dead load of the structure by 20 % & time consumption of work by 30%.
• Consistent sustenance and life Span of about 25 years.

Specifications
Proposed Roofing System shall Include The Following Specific Stages:
• Roof slab shall be inspected by M/s Al Haeel to check the acceptance of the roof for application of the Combo roofing system.
• Clean the roof using compressed air to make sure substrate is free of dust and debris.
• Supply and spray apply foam insulation polyurethane at an average thickness 30 -40mm over the entire roof areas including the up stand to a height of max.200mm.
• Supply and apply liquid waterproofing coating over the entire foam area and allow to dry for 48 hours.
• The cured area is then subjected to water testing for next 24 hours.
• Supply and lay protection layer over the entire roof area.
• Supply and fix expansion joint filler boards in slope and panels.
• Supply and lay protective screed in panels and cure as per standard procedure.
• Supply and apply bonding agent to all corners and up stand side.
• Supply and apply polysulphide sealant to all construction joints including backing rod.
• All the horizontal corners at parapets, skirting and up stand are smoothened by making angle fillets of standard cement, sand mortar mixes.
• Supply and brush apply cementitious weather coating over the entire roof area including up stands and allow drying 48 hours.
• The Guarantee is issued after the final inspection from the Manufacturer’s side.