

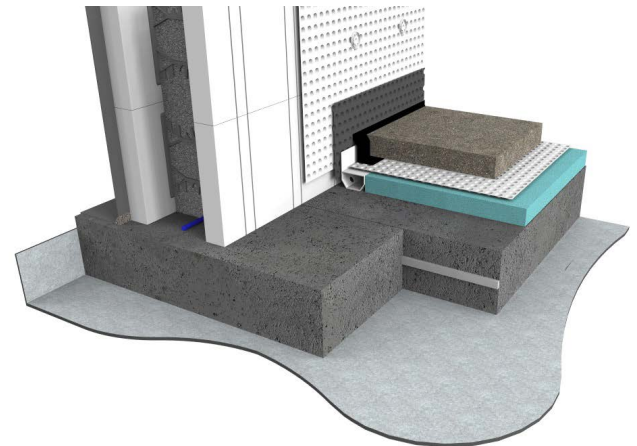
Type A & C Waterproofing

AC-34 SPECIFICATION SHEET

Combined Waterproofing of XPS Insulated Concrete Formwork



Rev 5.1 - 05 September 2022

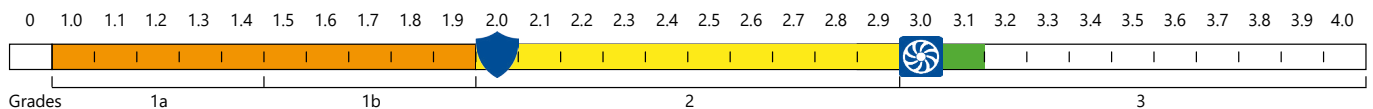


BUILD

WALL CONSTRUCTION:
XPS Insulated Concrete Formwork (ICF)

FLOOR CONSTRUCTION:
Reinforced Concrete (RC) Raft

NWI SCORE



NWI Score when ventilation has not been included.

Ventilation, dehumidification or air conditioning necessary; appropriate to intended use - BS 8102:2022.

This specification employs 2 forms of waterproofing (Type A - Barrier Protection) to limit ground water ingressing behind the (Type C - Drained Protection) to ensure that the desired internal environment is achieved. The effectiveness of the waterproofing is dependent on the Type A system being effective, especially at the construction joints.



The NWI score is awarded by a panel of experienced waterproofing design specialists and reflects the chances of success of that specification. The scoring system works in conjunction with the British Standard for waterproofing, which defines the three types of internal environments as Grades 1a, 1b, 2 and 3.

SPECIFICATION

ANCILLARIES

Install appropriate Newton waterbars to all construction joints and service penetrations.

TYPE A APPLIED EXTERNALLY

Waterproof the structure with [Newton HydroBond System](#) consisting of a fully-bonded liquid applied membranes.

TYPE C INSTALLED INTERNALLY

Waterproof internally with Newton CDM System providing drained protection.

NEWTON WATERPROOFING INDEX

The Newton Waterproofing Index (NWI) is a unique scoring system that accurately assesses the level of risk and potential success of specific waterproofing specifications.

NOTES

It is widely acknowledged that it is not possible to expect 100% defect free installation of an external waterproofing system. BS 8102:2022 section 4.3.2 outlines the defects that might occur in the waterproofing thus allowing water ingress.

The Type C system will manage this seepage, therefore this waterproofing solution requires confirmation from the ICF manufacturer that the ICF components are suitable to be placed below ground at the risk of being permanently wet.

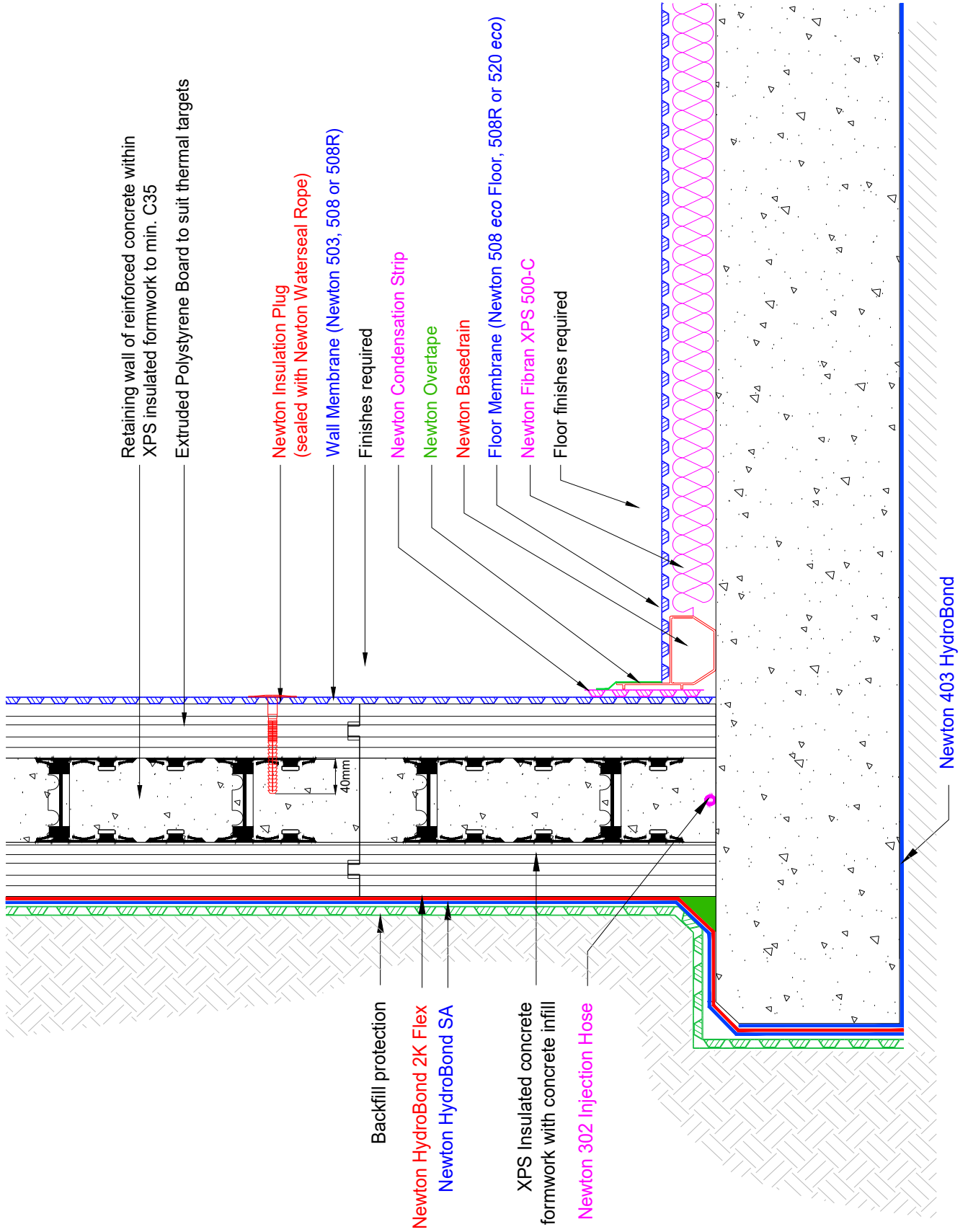
To improve the NWI score please see Newton Specification Sheet ABC-02.

The detailing of other building elements and termination details are available within the Newton Waterproofing specification library.

Any specification/advice provided is only valid if used with products supplied by John Newton and Company Ltd (trading as Newton Waterproofing Systems). Newton Waterproofing Systems reserve the right to update product literature at any time. Please always refer to our website for the latest versions.

AC-34

Combined Waterproofing of XPS Insulated Concrete Formwork



Type A & C Waterproofing

AC-34 OUTLINE SPECIFICATION

Combined Waterproofing of XPS Insulated Concrete Formwork

| | |
|----------------------------------|---|
| Specification | AC-34 |
| Description | Combined waterproofing to RC structure. No gas protection. |
| Build | XPS Insulated concrete formwork walls, supported from an RC raft. |
| Recommendation | Modular systems such as insulated concrete formwork (ICF) construction are inherently high risk and difficult to repair so remediation can be extensive and costly. As such and regardless of geological or hydrogeological assessment we would always advise that the best form of construction below ground is traditionally formed reinforced concrete. |
| Warning | The majority of modular/composite systems contain multiple paths for water to track and the Type A barrier used externally can never be 100% perfect, so regardless of the ground permeability or the steepness of the sloping ground we have to advise that to achieve a Grade 3 internal environment a Type C system should be used. |
| British Standard | BS8102:2022 section 10.1 states that the external elements of the structure should be capable of controlling the rate of water ingress so as not to exceed the capabilities of the cavity drain system. So we are accepting that water will pass by the Type A and be dealt with by the Type C. |
| Standard ICF | Many composite systems will suffer detriment when wet such as timber or expanded polystyrene. This material then becomes decayed/ perished and eventually the remaining structure will not be sufficient to support the Type A or Type C system. The material could even become deleterious. |
| ICF Manufacturer | A Type C system is included within this specification in addition to the Type A. When designing with a barrier system such as the Type A we must anticipate defects hence the Type C will manage those defects. If we accept that water will get into the structure we have to advise that the persons with design responsibility check the suitability of the modular or composite formwork systems with the respective manufacturer to ensure that they will not suffer detriment when wet. |
| NEWTON HYDROBOND SOLUTION | The Newton HydroBond System provides a complete and continuous waterproof barrier to the external surface of any below ground structure |
| NEWTON HYDROTANK (Raft) | All Raft construction joints (day joints, shrinkage joints, movement joints etc) should be waterproofed with Newton System 300 waterbars to limit water ingress thorough joints in the RC raft. |
| Wall construction | Within the ICF system, A high performance injectable waterbar system such as Newton 302 Injection Hose should be used at the junction between the raft and poured concrete within the ICF wall. |
| NEWTON CDM SYSTEM | Maintainable basement waterproofing solution ideal for new-build basements and refurbishment projects. Comprises four components: Cavity Drain Membranes, Drainage, Pumps and Control Systems. Complies with the British Standard for Waterproofing. |