

Section N – WOODWORK

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N.0 Compliance with Materials and Workmanship with the Building Regulations

In order to demonstrate conformity with the Building Regulations (Part D; Materials and Workmanship), and with the Construction Products Regulation (Regulation (EU) No.305/2011) as set out in National rules for Ireland (S.I. No.225 of 2013), the Contractor shall provide proof (a Declaration of Performance (DoP)) and (where applicable) a CE marking for all building products to be placed in the works.

The Contractor shall ensure that the product to be incorporated in the works, while complying with CPR, is fit for the use for which it is intended. The Contractor may be required to demonstrate this by means of manufacturer's confirmation, or independent testing certificate.

GENERALLY

N.1 Timber Generally

All timber used throughout the work shall be well seasoned and dry, free from sap, shakes, large or loose knot, waney edges or other imperfections. It shall be hardwood and softwood as defined in IS EN 942:2007 respectively. Timber which is in the opinion of the Architect inferior in character and condition or is not suitable for the requirements of the work because of the blemishes it contains shall not be used. All timbers found defective in these respects shall be removed from the site.

- White deal shall be spruce, straight, well seasoned and free from sapwood.
- Red deal for joinery, etc. shall be Scots Pine (Pinus Sylvestris).
- Flooring shall be best white deal.
- Pitch pine and Parana pine shall be first quality and free from knots.
- Oak shall be first quality, sound, close-grained and well-seasoned Japanese Oak.
- Teak shall be first quality.
- Mahogany shall be prime east African Mahogany.
- Oregon Pine (Douglas Fir) shall be first quality Oregon "Clear".

The size of both unwrought carpentry timber and joinery timber, described in this specification and shown on the drawings, in all cases are the finished sizes.

N.2 Native Timbers

It should be noted that the Specification for white and red deal permits the use of suitable native timber. When pricing the Bills of Quantities, the Contractor should satisfy himself that adequate supplies of the required is available, as claims will not be entertained for subsequently using imported in lieu of native timber.

N.3 Quality Control

All timber, timber components, joinery, preservatives and treatments will be subject to the NSAI Timber Quality Control Scheme.

The Contractor shall at all times allow access, provide facilities for sampling of materials and supply such information as may be requested in connection with the scheme to the NSAI Timber Certification Services, 1 Swift Square, Northwood, Santry, Dublin 9.

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N.4 Moisture Content

The moisture content of all timber shall not exceed the permitted maxima set out in IS EN 942:2007. Tests will be carried out on delivery and during the progress of the work in accordance with the recommendations of the foregoing standard specification: -

The specification requires at the time of fabrication or erection the moisture content shall not exceed the values set out below: -

(1)	Structural Timbers (including Roof Trusses)	20%
(2)	External Joinery Timbers	17 +/- 2%
(3)	Internal Joinery Timbers	15 +/- 2%

or as set out in the appropriate British or Irish Standards.

All timber shall be free from surface moisture at time of treatment with preservative. All timber on site shall be subject to inspection for moisture content by the Architect, Clerk of works or staff of the NSAI.

PRESERVATION OF TIMBER

N.5 Preservation of Joinery

All softwood species for joinery, including fascias and soffits shall be preserved in accordance with the preservative manufacturer's instructions and unless otherwise stated, with the recommendations of BS 8417:2011.

N.6 Preservation of Structural and Carpentry Timbers

All structural and carpentry timbers shall be pre-treated in accordance with the preservative manufacturer's instructions and unless otherwise stated, with the recommendations of IS EN 15228:2009.

N.7 Preservatives

All organic solvent preservative solutions must comply with Class F/N (fungicidal/insecticidal) of BS 5707:1997. All preservative formulations shall be registered and approved by the Pesticide Control Unit of the Department of Agriculture.

N.8 Method of Treatment for new Timbers

All new timber used on site, including all structural, joinery and flooring timbers, shall receive a double vacuum impregnation treatment in accordance with BS 5707:1997, Clause 5 using an organic solvent preservative as Clause N7 above unless otherwise approved by the Architect in writing. Substitute methods of treatment involving brushing, spraying, immersion or pressure impregnation using C.C.A. (Chromated Copper Arsenate) will not be allowed.

N.9 Double Vacuum Impregnation

All double vacuum impregnation treatments shall be carried out in specialist treatment plants approved by the relevant preservative manufacturer and shall be in comply with the requirements of BS 8417:2011 and shall be maintained so that they can carry out treatment schedules in accordance with the relevant Irish and European Standards.

All deliveries of treated timber to the site shall be accompanied by a treatment charge sheet showing date regarding the type of treatment, etc. (Certificates will not be accepted). The charge sheets shall be given to the Clerk of Works on the same day the material is delivered.

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N.10 Moisture Content

All timbers which are pre-treated, whether on the site or in specialist treatment plants, shall comply with Clause N.4 before treatment. All timbers shall be free from surface moisture at time of treatment.

After treatment, pressure impregnated timber shall be dried back to a moisture content as Clause N.4 (20% to 15%).

N.11 Drying Time Following Preservation Treatment

Following preservation treatment by double vacuum treatment all timber will undergo a drying of forty-eight hours, in open storage under cover with free air circulation.

Following preservation by other methods the timber will undergo a drying time in accordance with the treatment manufactures recommendations.

N.12 Handling of Treated Timber

Treated external joinery shall not be machined, drilled etc., under any circumstance, in all joinery shall be treated with preservative after cutting and machining and before assembly.

Treated timbers shall not be reduced in size.

Where treated timbers are machined or cut, e.g. Bird's mousing, notches, boring etc., the exposed areas shall receive two liberal brush coats of a organic solvent preservative "complying with Clause N7 and applied in accordance with BS 5707:1997. The colour of this preservative shall be markedly different from that of the original preservative. If this different colour is not readily seen, it will be assumed that no supplementary treatment took place and that timbers shall be re-treated.

N.13 Testing

Samples of timber for all tests shall be regularly and randomly selected for analysis. Samples of any wood preservative used on site shall also be taken for testing.

CARPENTRY

N.14 Timber for Carpentry

All structural timbers shall in accordance with IS EN 1995-1-1:2005+A1:2008 and shall be strength graded and marked in accordance with IS 127:2002. Each individual timber length shall bear the stamp indicating NSAI Approval showing the grade and strength class of the timber.

White deal wrot timber boarding shall be free from excess cupping, unsound or loose knots, wane or excess fissures.

N.15 Workmanship

Rafters, purlins, sole plates, ridges, collars etc. shall be in one length if possible. Where joints are unavoidable, the timbers shall be properly scarfed and spiked and bolted, as required. Scarfs, unless otherwise directed, shall be 0.5m long

N.16 Metalwork

Metal straps, bolts, joist hangers etc. and metallic coating shall comply with relevant sections of Section Q – Metalwork.

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N.17 **Screws, Nails, Bolts, etc**

Screws shall comply with either BS 1210:1963, IS 97:1986 or IS 97-2:1988, as appropriate and steel nails with BS 1202-1:2002. Nails for fixing external joinery shall be aluminium in accordance with BS 1202-3:1974.

N.18 **Truss Clips**

Truss clips for connections to wall plates to be 1.00mm thick (20 SWG) galvanised mild steel or stainless steel of approved manufacture at all party walls. Mild steel to be hot-dipped galvanized using double-dipped process to BS EN ISO 1461:2009.

N.19 **Joist Hangers**

Joist hangers are to be of galvanised steel or stainless steel and are to comply with IS EN 845-1:2012 (+NA:2013). Joists shall not be built into party walls. Mild steel to be hot-dipped galvanized using double-dipped process to BS EN ISO 1461:2009.

N.20 **Trimmer Connections**

All trimmers to be fixed with joist hangers as clause N 19.

N.21 **Nil**

N.22 **Trussed Rafters**

Trussed rafters shall comply with IS EN 1995-1-1:2005+A1:2008 and shall be manufactured under the NSAI Roof Truss Quality Control Scheme and tagged with the "NSAI APPROVED" tag.

Details and calculations shall be submitted to the Architects for approval.

Where details or truss layouts shown on the general arrangement drawings differ from the requirements of the Design System Owners the Architect shall be informed before fabrication of the trusses.

The trusses shall be to the pitch and spans shown on the detailed drawings and fixed at centres not greater than 600mm unless otherwise shown. At chimney stacks and trap door where centres exceed 600mm, unless otherwise specified, provide a double truss on either side and intermediate mono trusses are required complete with all purlins, binders and trimmers all as shown on the drawings and in accordance with the fabricators Design System Owners details.

Water tanks shall be supported over four trusses in accordance with IS EN 1995-1-1:2005+A1:2008 and as shown on the detailed drawings. Where water tanks exceed 270 litres capacity the Contractor shall inform the fabricator who shall make allowance for this in the design.

Trusses shall not be cut, modified or repaired on site in any way.

N.23 **Storage of Trussed Rafters**

Trussed rafters shall be stored upright and supported at the design bearing points (wall plate positions). The supports shall be level and at such a height as to ensure that any rafter overhangs are free from ground contact.

All supports shall be firm and safe and the storage shall be on firm level ground free of vegetation. All trusses shall be protected against exposure to rain and in such a way as to allow for the free circulation of air.

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N.24 Bracing to Trussed Rafters

Permanent horizontal and diagonal bracing members shall be fixed to ceiling ties and rafters as shown in IS EN 1995-1-1:2005+A1:2008 and on the detailed drawings.

Bracing shall start at each gable and at each separating wall and repeat without interruption in the length of every roof. No bracing shall cross a party wall.

The ends of all longitudinal bracing members shall directly connect with the gable or separating walls. The lower ends of diagonal rafter bracing members shall abut the end walls as closely as possible to the intersection between the end wall and the wallplate.

Where shown or otherwise specified provide additional bracing to ceiling ties and internal truss members in accordance with the Design System requirements, details of such additional bracing shall be submitted by the fabricator to the Architect before fabrication of the trusses.

All bracing shall consist of 100 X 25 (minimum) softwood fixed to each truss with two number 2.65mm X 75mm long round wire nails.

N.25 Erection of Trussed Rafters

Temporary battens shall be nailed to each side of the ridge to maintain position and the trussed rafters secured to the wall plate at each end with truss clips as clause N30 and fixed with minimum 30mm long X 3.75mm (9SWG) sherardised square twisted shank nails. Clips shall be nailed in accordance with the manufacturer's recommendations and all nail holes provided shall be used. Sherardising to accordance with IS EN 13811:2003.

N.26 Lateral restraints to roofs

Where shown on the drawings or otherwise specified provide mild steel lateral restraint straps, at 2 metre maximum centres to roofs at gable walls.

Ensure that "turn-downs" on straps are in tight contact with the wall. Straps to rafters must engage in a block not less than $\frac{3}{4}$ full size. All straps are to be fixed with at least 4 no. 8 gauge X 50mm counter-sunk plated wood screws.

Straps shall be of sufficient length to engage in at least two rafters or ceiling ties. Provide 100 X 44mm softwood noggins between rafters/ceiling ties at every strap. Securely fix 44mm softwood wedges between wall and adjacent rafter/ceiling tie. Rafters and ceiling ties shall not be notched.

N.27 Wall Plates

Wall plates unless otherwise shown shall be 100 x 75mm white deal, square sawn and free from any distortion. Wall plates shall be halved at joints and cut up to each side of party walls.

All wall plates shall comply with the requirements in IS EN 1995-1-1:2005 (+A1:2008).

All wall plates shall be positioned and aligned to given both correct span and level and fixed so as to provide the full bearing area to the ceilings joists.

N.28 Fixing of Wall Plates

Wall plates unless otherwise specified shall be fixed down at 1200 mm maximum centres and within 300mm of their ends and joints.

Fixings direct to masonry walls shall be with 100mm x 1200mm long vertical mild steel restraint straps as clause 26. The straps shall be screwed to the wall plate with 2 No. 12 gauge x 50mm counter-sunk plated wood screws and fixed to masonry with 6 No. 8 swg x 75mm masonry nails evenly spaced along the length of the strap.

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N.29 Chimney Breasts and Flues

All structural timber shall be kept a minimum of 40mm clear of all chimney breasts and flues.

N.30 Tank Trays

Tank to be set on 19 X 119mm T & G boarding spiked to 2 No. 36 X 100mm primary bearers, spiked to 2 No. 75 X 150mm secondary bearers, spiked to 2 No. 44 X 100mm spreader beams which in turn shall be supported as close as possible to the node points of the last four trusses – all to comply with the requirements of IS EN 1995-1-1:2005+A1:2008.

N.31 Cut Pitched and Flat Roofs (Clauses 29-32)

Timber for pitched roofs for other than trussed rafter construction shall be white or red deal complying with IS EN 1995-1-1:2005+A1:2008. Section sizes and spacing shall be as shown on the detailed drawings.

Ceiling joists, rafters, collars and wall plates, unless otherwise specified shall be nailed at all joints. Purlins shall be supported by ends and by struts from cross and longitudinal walls. Struts shall be nailed and notched to purlins and runners. All joints shall be at least twice nailed and size and spacing of nails shall be in accordance with IS EN 1995-1-1:2005+A1:2008.

N.32 Longitudinal Joints

Ceiling joists and rafters shall be in one length between spans.

Purlins, ridges and collars etc. Shall be in one length unless otherwise agreed with the Architect. Where joints are unavoidable the timbers shall be properly scarfed or half jointed and spiked and /or bolted as required.

N.33 Screwed or Bolted Joints and Connections

Correctly sized pre-drilled holes shall be formed for all screwed or bolted joints and connections. The size, spacing and tolerance for bolts, screws and their accessories shall be in accordance with IS EN 1995-1-1:2005+A1:2008.

N.34 Traditional Pitched Roofs

Construct roofs as shown on drawings and on detailed drawings to be supplied as the work proceeds, all framed up in the best manner possible, well spiked together and to the following scantlings unless otherwise noted or instructed in timber as Clause 31: -

Rafters 125mm X 36mm at 400 centres maximum.

Ceilings joists 150mm X 44mm at 400 centres maximum.

Collars 150mm X 44mm at every fourth rafter.

Hangers and runners 75mm X 50mm hangers at every fourth rafter.

Ridge 200mm X 25mm step-jointed and plated.

Wall plates 100mm X 75mm step jointed.

Struts 100mm X 75mm.

Purlins 150mm X 75mm stepped jointed.

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Notch rafters over wall plates, trim for chimney with 100mm X 75mm trimming rafters and trimmers, properly scarfed and bolted. Wall plates shall be as Clause 27 and fixed down as Clause 28.

Trim for trap doors, one to each house in positions to be decided on site or as indicated on drawings with 75mm thick trimmers, and for ceiling lights, if shown. Provide 19mm tongued and grooved boarding as may be necessary to take flashings around chimney stacks.

Purlins shall be supported by end and party walls and by struts from cross and longitudinal walls birdsmounted to take purlins. Purlins shall be supported every 2134mm minimum.

N.35 **Fascia, Soffit and Barge**

In order to reduce long-term maintenance exposed timber at roof level has been reduced to a minimum by use of concrete barges, hip roofs and flush brick eaves. Where unavoidable sizing will be as follows;

Fascia: 27 X 169mm

Soffit: 19mm T.G./V sheeting.

Barges: 27 X 169mm on 115 X 44mm gable ladder at 450 centres.

N.36 **Formwork to Eaves Bands, Concrete Barges etc.**

All casings, centring and moulds for concrete work shall be spruce or other approved timber of sufficient thickness, wrought where necessary and coated with approved mould oil. Watertight construction shall be used. They shall be substantially and accurately constructed true to level surface line for the centre length of any block of houses, and watered before concrete is laid or placed. They shall remain in position for such a period after the concrete is placed, as the Architect may direct. The Contractor shall inform the Architect or their representative when he intends to strike any shuttering and shall obtain their consent. Responsibility for the safety of the concrete shall rest with the Contractor, who shall make good at his own expense any damage or defect. The formwork shall be so arranged as to permit of easing and removal without jarring the concrete.

N.37 **Timber Floors**

Timber floor joists to be in accordance with Clause 14 and as shown on drawings. Joists to be 175 X 44mm. Trimming joists to be 175 X 75mm. Fix 175 X 44mm solid bridging to joisted first floors as shown on drawings.

Flooring throughout to be 119 X 19mm (fin) spruce tongued and grooved with splayed headings, securely spiked and cleaned off. Boards for access to electrical wiring to be screwed as indicated on drawings, the tongues having been first removed.

Flooring boards are to be delivered on the site as soon as possible after the order to commence work is given and stacked under cover so that the air will circulate freely around them. The boards are to be placed loosely into the house as soon as the roofing is complete and left until ready for fixing.

N.38 **Sundries**

Provide and fix scaffolding, rough boarding, shuttering, strutting, centering etc., with all necessary nails, bolts and straps etc.

N.39 **Additional Support for Plasterboard Ceiling Slabs**

Where ceiling ties to roofs are more than 50mm clear of party or gable walls provide additional 75 x 35mm ceilings joists to support edge of plasterboard ceiling slabs. Fixings shall be 60mm long masonry nails at 300mm max centres; no fixing to be more than 200mm from end of joist and no fixing shall be made into a mortar joint.

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Also provide 50 x 44mm softwood noggins to **all** unsupported **edges** of plasterboard ceiling slabs in accordance with the manufacturer's requirements.

N.40 **Nil**

JOINERY

N.41 **Timber for Joinery**

Softwood shall comply with IS EN 942:2007.

Hardwoods shall be provided to IS EN 942:2007. Samples of each type of hardwood of representative sections for use in the work shall be previously submitted by the Contractor for the Architect's approval.

The quality of timber for exposed surfaces in finished joinery shall comply with IS EN 942:2007.

N.42 **Workmanship**

Workmanship shall generally be in accordance with BS 1186-2:1988 and BS 1186-3:1990; tolerances to be generally in accordance with BS 4787-1:1980.

Any timber splitting or opening to the extent of one millimeter within the Contract Maintenance Period shall be replaced. All joinery work is to be properly wrought and framed together and finished in a workmanlike manner. All framing to have mortise and tenon joints. Tonguing to be cross-grained. Work is to be prepared and framed up as soon as possible after the order to commence work is given and stored dry under cover, so that the air will circulate freely around it. No work is to be glued or wedged up until required for use, unless otherwise specified or directed.

All joinery is to be finished die square, and when in work is to hold the full dimensions shown on drawings. No piecing, lengthening or unnecessary joining will be permitted.

Work exposed to view is to be wrought and that exposed to weather is to be put together with an approved silicone sealant.

N.43 **Plywood**

Plywood for internal and external use shall comply with IS EN 636:2012 plywood for use in exterior conditions. Plywood to have a bonded quality according to the requirements in IS 314-2:1993.

N.44 **Medium Density Fibre Board (MDF)**

Medium Density Fibre Board (MDF) shall comply with IS EN 622-1:2003 and IS EN 622-5:2009.

Moisture resistant (MDF.H) shall be used internally as defined in IS EN 622-5:2009.

For external use Exterior MDF shall be used where all surfaces shall be painted.

N.45 **Blockboard and Chipboard**

Blockboard and Chipboard shall not be used except in kitchen units as specified in Clause N68.

N.46 **Nil**

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N.47 Skirtings and Pipe Casings

Red deal, single bullnosed 119 X 19mm

N.48 Architrave's

Red deal, single bullnosed 69 X 19mm.

N.49 Internal Doors

Internal doors to be 44mm flush type **half hour fire doors** certified as complying with requirements of BS 476-22:1987. The doors to be slipped on all edges and be supplied with 1½ pairs of butt hinges. Frame and architrave's are to be in red deal to the design and dimensions shown on detail drawings.

All first floor frames and in other locations where indicated, to extend to ceiling level with glazed panel over door. Frames to be to the sizes shown on the detailed drawings and fixed with 150mm long propriety frame fixings to blockwork and 100mm x 4 crosshead countersunk screws to timber partitions. Fixings shall be located 200mm from top and bottom of frame and not more than 600mm centres.

A sample of the each different type of door set shall be submitted to the Architect for approval prior to any being delivered to the site.

Door Saddles

N.50 Provide and fit 144 X 19mm red deal door saddles to all internal doors unless otherwise directed. Saddles shall be twice levelled on top checked to frames and rounded, bedded in pitch and tar at concrete on tiled floors. Saddles shall be secured with brass countersunk screws to floors and finished with three coats polyurethane varnish.

N.51 External Doors

Front and rear external doors, frames and screens complying with IS 196-1:1983 and IS 196-4:1982 shall be manufactured in red deal (*pinus sylvestris*) or, **subject to the approval of the Architect**, in hardwood all as detailed on the drawings. The door leaf shall be a minimum thickness of 44mm and all suitable for double-glazing. Weatherseals and threshold as Clause N216.

A performance test certificate report or Agrément Certificate shall be supplied for the glazing of doors detailing the results for air infiltration, water penetration and wind resistance against the required criteria of 300 Pa, 200 Pa and 2000 Pa respectively for compliance with BS 6375-1:2009, IS EN 12211:2000, IS EN 1026:2000 AND IS EN 1027:2000.

Unless otherwise specified, external doors should have a maximum U-value of 1.6 W/m²K averaged across glazed and solid elements.

External door-sets shall be factory finished as clause N56.

Ironmongery to external doors shall be as clauses N210 to N218 inclusive. The Contractor shall also submit proposals from the manufacturer concerning the continuing availability of spare and replacement ironmongery items for the purposes of maintenance.

A sample of the each different type of door set shall be submitted to the Architect for approval prior to any being delivered to the site.

N.52 Doors and Frames to External Stores

To be red deal ledged, braced and sheeted doors complying with IS.196-6:1986 and as shown on detailed drawing. Frames to be red deal (*pinus sylvestris*) to the sizes shown on the detailed drawings and fixed with 150mm long propriety frame fixings to blockwork. Fixings shall be

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located 200mm from top and bottom of frame and not more than 600mm centres. Bottom of frame to be secured with iron spud and rings to concrete spud blocks.

Outer face of door frame at store to be lined with bellcast.

N.53 Gates to Gardens

Timber garden gates to ledged and braced boarded gates. Ledges and braces to be 27 X 144mm and boarding 19 X 69mm sections. Frames to be 44 X 94mm with 19 X 38 planted stops. All as detailed drawings.

N.54 Nil

N.55 Roof Windows

Roof windows shall consist of an aluminium faced, softwood timber frame roof window fitted with double glazing (to be specified by the Architect) and shall be either top hung or central pivoted opening as to the drawings. The window shall come with prefabricated aluminium flashing incorporated into the roof window design.

Unless otherwise specified, roof windows should have a maximum U-value of 1.6 W/m²K averaged across frame and glazing.

A performance test certificate report or Agrément Certificate shall be supplied for the windows detailing the results for air infiltration, water penetration and wind resistance against the required criteria of 300 Pa, 200 Pa and 2000 Pa respectively for compliance with BS 6375-1:2009, IS EN 12211:2000, IS EN 1026:2000 AND IS EN 1027:2000.

Prior to the commencement of bulk manufacture the Contractor shall submit a sample window and shop drawings showing detail of sections, assembly and fixings for approval by the Architect. The sample shall in all respects, including finish, be representative of all deliveries and shall be fitted with all required ironmongery. The Contractor shall also submit proposals from the manufacturer concerning the continuing availability of spare and replacement ironmongery items for the purposes of maintenance.

N.56 Windows

Windows shall be fully-finished, factory assembled windows in accordance with BS 644: 2012, manufactured in red deal (*pinus sylvestris*) with hardwood cill or, **subject to the approval of the Architect**, in hardwood all as indicated on the drawings and shall be suitable for double-glazing. Timber shall comply with IS EN 942: 2007.

A performance test certificate report or Agrément Certificate shall be supplied for the windows detailing the results for air infiltration, water penetration and wind resistance against the required criteria of 300 Pa, 200 Pa and 2000 Pa respectively for compliance with BS 6375-1:2009, IS EN 12211:2000, IS EN 1026:2000 AND IS EN 1027:2000.

Prior to the commencement of bulk manufacture the Contractor shall submit a sample window and shop drawings showing detail of sections, assembly and fixings for approval by the Architect. The sample shall in all respects, including finish, be representative of all deliveries and shall be fitted with all required ironmongery.

Windows shall be factory-finished (opaque or clear, with the approval of the Architect) using a coating system complying with IS EN 927-1:2013 and IS EN 927-2:2006.

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Unless otherwise specified, windows should have a maximum U-value of 1.6 W/m²K averaged across frame and glazing.

Frames shall be fixed with stainless steel straps 150 x 25 x 1 mm stainless steel, type 304 to IS EN 10088-2:2005. fixed to frame and wall with 3 No. 8 gauge x 38mm stainless steel screws. Minimum 4 straps per frame. Fixings to be located 200mm maximum from bottom and top of frame and at not more than 600mm centres. Cills to be bedded in mastic to concrete cill.

Ironmongery for windows shall comply with clauses N201 to N204 inclusive. The Contractor shall also submit proposals from the manufacturer concerning the continuing availability of spare and replacement ironmongery items for the purposes of maintenance.

Unless otherwise specified windows shall not have permanent ventilation as generally passive ventilation systems will be installed. Where permanent ventilation windows is specified ventilators to be as Clause N206.

N.57 Staircases

Form stairs in the sizes and sections shown on the detailed drawings.

Timber quality to comply with Class J30 of IS EN 942:2007. Sizes and tolerances shall comply with BS 585-1:1989 and workmanship with BS 1186-2:1988.

Treads, Strings, Handrails and Newel Posts to be red deal. Risers to be either white deal or, **with prior approval of the Architect**, MDF.H complying with Clause 44.

Unless dry-lined walls shall be fully plastered before the staircases are fixed against them. Newel posts as required shall be properly secured to floors and notched to trimmers etc.

Prior to the commencement of bulk manufacture the Contractor shall submit a sample staircase for approval by the Architect.

N.58 Bulkheads

If bulkheads are shown over stairways, frame up as shown on detail drawings. Trim around over stair walls as previously specified with 75mm wide trimmer. Bulkhead bearers on splay shall be 75mm X 35mm checked and birdsmouthed as necessary and so arranged to give a vertical clearance of 2000mm minimum measured over stair tread nosing unless otherwise shown or instructed.

N.59 Trap Doors

From trap doors for access to roof space in position shown on drawings with 750mm X 600mm MDF.H doors 22mm thick. Linings to be 112mm X 75mm red deal mitered at angles and rebated to receive plaster with 19 X 69mm stop to receive trap door. Insulate trap door as Clause N107.

N.60 Hot Press

Doors to hot press shall be flush panel doors as clause N49 to size shown on detailed drawings.

Include for forming three tiers of 19 X 44mm spar shelving, 25mm apart, Form base for cylinder with t & g boarding screwed to 75mm X 150 rough deal bearers.

NOTE: Where hot press is on ground floor the cylinder is to be supported 1 metre off floor level on 119mm X 19mm t & g base supported by 69mm X 44mm wrot red deal framing fixed to floor wall.

N.61 Ducting for Pipework

Ducting to vertical and horizontal pipework to consist of 35mm X 44mm white deal framing faced in 9mm removable plywood panels, as clause N43, fixed with screws and cups at 450mm centres. Provide door in panel for access to gate valves. All primed and painted two finish coats oil paint to selected shade,

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N.62 Bath Panels

Enclosures to bath to be formed with 35mm X 44mm rough deal studding sheeted on outside with approved 9mm Plywood, as clause N43, primed and painted two finish coats oil paint to selected shade, fixed to framing with raised headed C.P. screws and cups

Form 100 X 35mm recessed skirting to enclosures. Provide waterproof silicone sealant around baths. Provide two rows white ceramic tiles around bath.

N.63 Stud Partition

Where shown on drawings provide timber stud partitions with 75 X 44 studs at 400mm centres with 75 X 44 noggins at 900mm vertical centres staggered. Wall posts, sills, heads, sole pieces, trimming pieces etc. to 75 X 44. Faced with 9.5mm dry lining as specified elsewhere.

Where first floor partitions run parallel to floor joists provide 175 X 44 solid bridging at 400 centres. Where line of partition and joists correspond exactly joist to be increased to 175 X 75.

Where roof is of traditional cut construction provide 44 X 44 noggins at 600 crs. where partitions run parallel to roof trusses.

Where the roof is of a prefabricated truss construction, the plasterboard ceiling lining shall be continuous for entire roof, ie installed before partitions. **On no account should partitions be fixed to trusses.**

N.64 Nil

N.65 Eaves Ventilation

Provide continuous eaves ventilation as shown on drawings.

N.66 Shelf to Fire Surrounds

Provide Mahogany shelf 125 X 38 mm rounded on edge to brick fire surrounds.

N.67 Arrises

All arrises exposed in finished work shall be rounded and rubbed down with abrasive paper before priming or staining, to minimum 1.5mm radius generally and minimum 3mm radius to upper arrises of horizontal members exposed to the weather, unless otherwise shown to be of greater radius.

N.68 Kitchen fitments

Provide kitchen fitments, both floor and wall units, as shown on drawings and schedules. For sink base units (see Clause N69), The units shall meet the performance requirements of BS 6222-2:2009 test level 'H'.

Carcase construction shall be from high density fine surface 15mm moisture resisting chipboard coreboard complying with IS EN 312:2010 Type P3, with an approved factory applied 80g/m² melamine finish complying with IS EN 14322:2004. All exposed edges to be sealed with PVC edging. Structural rails and uprights shall be as Clause N41; rear uprights of double base units to be inset by 65 mm to accommodate services running along walls.

Carcases to be supported on adjustable feet which shall allow for a toe recess of not less than 50mm deep at the base of the unit.

The Carcass shall have predrilled corrosion resisting corner plates at each corner for wall fixing.

Where panels are cut to allow access to valves or for any other reason the exposed edge shall be sealed using oil-based paint

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Doors shall be not less than 15mm thick and shall be capable of opening through 180°. Hinges to be ametal sprung concealed system with integral catches.

Drawers shall be flat-bottomed and be constructed from proprietary high impact polystyrene sections with hardboard base or proprietary metalbox system. Side runners shall have roller system and stop.

Handles shall be to the Architects selection.

Shelves shall be adjustable for height and be retained in position using self-retaining bearers. Shelves in double base and wall units to be supported in 6 positions (centrally front and back as well as both ends) to prevent deflection under heavy loads.

Half-length shelves to be provided in all sink base units for easy access to sink traps.

Worktops shall be postforming grade laminate to IS EN 438-1:2005 bonded to 30mm minimum thickness moisture resisting chipboard coreboard complying with IS EN 312:2010 Type P3. The worktop shall be suitably balanced on the reverse surface with a moisture resistant compensating veneer. Worktops shall be in continuous lengths unless otherwise shown and shall be supplied to length with both ends lipped in matching laminate. All necessary battens and supports for worktop shall be included.

Samples of base and wall units shall be provided for the Architects approval.

N.69 Sink Base Units

Sink base units, with 1 No. drawer and shelf, shall be built to receive a single drainer stainless steel inset sink top in a continuous worktop as shown on the drawings. The units shall generally be in accordance with Clause N68.

The carcass shall be designed to ensure that no on site modifications are required when installing the sink top and waste pipe and trap.

A sample base unit complete with sink tap, taps and waste shall be provided for the Architects approval.

N.70

To Nil

N.100

IRONMONGERY

N.101 Ironmongery Generally

The contractor shall submit samples of all ironmongery, which shall include, where possible, alternative surface finishes, for the Architect's approval before ordering; and shall obtain and deposit with the Architect an undertaking from the suppliers that the goods will be delivered in such consignments and qualities as will ensure due progress and completion of the work in accordance with the Contract. The approved samples shall be retained on the site as the standard for subsequent deliveries and shall ultimately be used in the works. Screws and fixings shall be of a suitable gauge and material for the purpose and shall match the article to be fixed. The Contractor shall also submit proposals from the manufacturer concerning the continuing availability of spare and replacement ironmongery items for the purposes of maintenance.

N.102 Sundries

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All ironmongery shall include for all screws, fixings, keys, keyhole plates, receivers and other incidentals as that may be required for the correct installation and operation of the item.

N.103 **Lubrication and adjustment of Ironmongery**

All wearing surfaces of lift-off hinges including rising butts shall be lubricated during fixing using a suitable grease as recommended by the manufacturer and the wearing surfaces of other metal hinges shall be lubricated whilst laid flat using light machine oil. Any other ironmongery requiring lubrication for correct functioning shall be lubricated in accordance with the manufacturer's recommendations.

N.104 **Windows Generally**

Each opening sash to have the following ironmongery: -

- (A) 1 No. pair one-piece easy clean sliding friction hinges, as 'Egress Easy Clean Stays' supplied by Basta Parsons Ltd or similar and approved The stay length shall not be less than half the sash height and installation shall fully comply with the manufacturers instructions. The stays shall incorporate an opening restricting device.
- (B) 2 No. approved casement fasteners with push type lock. On no account shall key type locks be used on bedroom windows.

A sample hinge and casement fastener is to be supplied and approval of the Architect obtained prior to any installation.

N.105 **Drainage Outlets – Where Applicable**

6mm minimum dia. tubular copper drainage outlets to be provided to all condensation channels as follows: -

- (A) 3 No. where channel is over 1350mm long.
- (B) 2 No. where channel is less than 1350mm long but over 300mm long
- (C) 1 No. where channel is less than 300mm.

N.106 **Window Ventilators**

Provide closeable slot ventilator morticed into frame. The ventilator or ventilators, of approved design, must provide a minimum free area of 6500mm².

N.107

to NIL

N.109

N.110 **Doors Generally**

Ironmongery to doors to be as listed on Schedules N1 to N4 (at the end of this section) or of similar performance and to a specification approved by the Architect. The Specification of all items in Schedules N1 to N4 to be as listed below. The Contractor shall also submit proposals from the manufacturer concerning the continuing availability of spare and replacement ironmongery items for the purposes of maintenance.

N.111 **Door Stops**

Provide in all locations where doors open against walls etc, 1 screw for fixing, to prevent handles etc. from damaging adjoining wall surfaces.

N.112 **Butt Hinges (Timber Doors)**

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100mm double pressed steel butt hinge, self colour steel finish, fixed with 32mm X 12mm gauge countersunk steel wood screws.

N.113 **Locks to External Timber Doors**

External doors to have approved three point locking system complete with lever lock furniture and latch. The latch is to have an internal deadlocking facility and cylinder to have a minimum of five tumbler pins giving a minimum of 10,000 differs. 2 keys (minimum) to be provided.

N.114 **Letter Plate**

Combination letter plate and knocker to have inward opening sprung flap with a minimum aperture of 195mm X 40mm. Fixings to be from inside face of door.

N.115 **Numerals**

Provide for up to 3 No. 50mm high Chromium or Brass plated numerals and fixings to front doors only.

N.116 **Weatherseals to External Timber Doors**

Provide approved weatherseal system, including weatherbar to all external doors. Details of the system to be approved by the Architect and be supplied with the sample door as Clause N51.

Any weatherbar at the foot of the door must be compatible the level access threshold as detailed on the drawings. This detail is also to be incorporated in the sample door as above.

All external doors shall be fitted with gaskets and weather-stripping complying to IS EN 12365-1:2003.

N.117 **Pull Handles to Timber Doors**

150mm cranked pull handle, zinc alloy or other approved, with front fix "D" type old persons and disabled dwellings only. Pull handle shall meet compliance with BS 8424:2004.

N.118 **Barrel Bolts (Internal)**

250mm Long Chromium Plated brass heavy duty pattern barrel bolt and receiver with enclosed shoot. When positioned at the top of doors bolts to be mounted vertically.

N.119 **Nil**

N.120 **Mortise Sash Lock (2 Lever)**

65mm 2 lever Mortise sash lock with C.P. for end and striking plate and reversible brass latch. With a minimum 16 Differs and 2 keys (minimum). Keys to differ in all locations within each dwelling.

N.121 **Lever lock Furniture**

Provide with all mortise sash locks one set of sprung lever action handles and lock plates for front fixings complete with spindle. Lever locks to be in accordance with the requirements of IS EN 1906:2012.

N.122 **Privacy mortise lock (bathrooms only)**

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- 75mm Mortise sash lock with C.P. fore-end and striking plate and reversible brass latch. Lock to have emergency release facility.
- N.123 **Lever Lock furniture for Privacy Lock (As N222 above)**
One set of sprung lever action handles and lock plates for front fixing complete with spindle.
Lock plates to include locking nib to internal face of door and emergency release mechanism to outside face of door.
- N.124 **Mortise Latch**
63mm tubular mortise latch with zinc-plated fore-end and striking plate and reversible latch. To be in accordance with IS EN 12209:2004 (+COR:2005)
- N.125 **Lever handle for Mortise Latch**
One half set of sprung action lever handle and latch plate for front fixing complete with spindle.
- N.126 **“T” Hinges**
254mm long medium black japanned steel “T” hinge with steel pin and galvanised screws.
Hinges shall meet the requirements of IS 1935:2002 (+COR: 2005).
- N.127 **Padlock Bolt**
250mm galvanised steel padlock bolt and receiver with galvanised screws to timber gates and welded to steel doors. All padlock bolts and fittings shall be in compliance with IS EN 12320:2012.
- N.128 **Butt Hinges (Steel Doors)**
180mm steel pin butt hinges with independent bearings and grease nipples and welded to steel doors.
- N.129 **Mortice Sash Locks to Steel Doors (Service Blocks)**
Mortice sash locks to steel doors to be ‘Multi-T-Lock’ European Profile dead locks with 75mm lock case and ‘Multi-T-Lock’ “Interactive” key security.
The locks and key security to be to Fingal County Council (Travellers Section) system and supplied by Crothers Security Ltd, Solution House, 139 St. Peters Road, Dublin 12.
- N.130 **Pull Handles to Steel Doors**
150mm x10mm dia steel pull handles welded to face of door. Pull handles shall meet requirements in BS 8424:2004.
- N.131 **Locks to Gallows Gates**
Provide shrouded locking system to gallows gates to details shown on drawings complete with ‘Multi-T-Lock’ “Interactive” key security as Clause N229.
- N.132
to Nil
- N.134
- N.135 **Shower Rails**
Provide shower rails, of approved manufacture, to baths and showers consisting of minimum 1800mm long 25mm diameter C.P. tube complete with 2 No. wall flanges or plugged and screwed to walls in accordance with manufacturers instructions.

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Where corner configuration is required provide matching C.P. right angle bend or single piece preformed tube.

N.136 Coat Hooks

Die-cast hat and coat hook with black polyester powder coating (as Basta Type 1190 or similar and approved) plugged and screwed to walls 19mm R.S.D Pozidrive screws.

SCHEDULE NO: N1		JOB:	
TITLE: Schedule of Ironmongery – External Doors and Gates to Houses			
LOCATION	CLAUSE REF OF ITEM	DESCRIPTION	NO REQUIRED
Front Doors	N112 N113 N114 N115 N116 N118 N117	P.S. Butt Hinge 3 Point Locking System Combined Letter Plate Numerals Weatherseals Barrel Bolts Pull Handle (Single bed type and disabled dwellings only)	3 per door 1 set per door 1 per door 1 to 3 per door 1 set per door 2 per door 1 per door
Back Doors	N112 N113 N111 N116 N118	P.S. Butt Hinge 3 Point Locking System Lever lock furniture Weatherseals Barrel Bolts	3 per door 1 set per door 1 set per door 1 set per door 2 per door
External Stores	N126 N127	Steel “T” Hinge Padlock Bolt	2 per door 1 per door
Rear Entrance Gates	N126 N127	Steel “T” Hinge Padlock Bolt	2 per door 1 per door

SCHEDULE NO: N2		JOB:	
TITLE: Schedule of Ironmongery – Internal Doors to Houses			
LOCATION	CLAUSE REF OF ITEM	DESCRIPTION	NO. REQUIRED
Living Rooms	N112	P.S. Butt Hinge	3 per door
Kitchens	N120	Mortise Sash Lock (2 lever)	1 per door
Bedrooms	N121	Lever Lock Furniture	1 set per door
Bathrooms and WC's	N112	P.S. Butt Hinge	3 per door
	N122	Privacy Mortise Lock	1 per door
	N123	Lever Lock Furniture (for Privacy Lock)	1 set per door
	N135	Shower Rail	1 set per unit

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Hot Press And Stores	N112 N124	P.S. Butt Hinge Mortise Latch Lever Latch Furniture	3 per door 1 per door 1 half set per door
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SCHEDULE NO: N3		JOB:	
TITLE: Schedule of Ironmongery – Service Blocks			
LOCATION	CLAUSE REF OF ITEM	DESCRIPTION	NO REQUIRED
External Timber Doors to Kitchen and Bathroom	N112 N113 N116 N118 N115 N114	P.S. Butt Hinge 3 Point Locking System Weatherseals Barrel Bolts Numerals Combined Letter Plate	3 per door 1 set per door 1 set per door 1 per door 1 to 2 per unit 1 per unit
External Steel Doors to Kitchen and Bathroom	N112 N113 N127 N118 N130 N115	Butt Hinge with Bearing Mortice Sash Lock Padlock Bolt Barrel Bolts Pull Handles Numerals	2 per door 1 set per door 1 per door 1 per door 2 per door 1 to 2 per unit
Door to External Store	N112 N113 N127 N130	Butt Hinge with Bearing Mortice Sash Lock Padlock Bolt Pull Handles	2 per door 1 set per door 1 per door 2 per door
Door to Service Duct	N112 N113 N130	Butt Hinge with Bearing Mortice Sash Lock Pull Handles	2 per door 1 set per door 2 per door
Bathroom	N134 N135	Hat & Coat Hook Shower Rail	2 per unit 1 set per unit

SCHEDULE NO: N4		JOB:	
TITLE: Schedule of Ironmongery – Caretakers Facilities			
LOCATION	CLAUSE REF OF ITEM	DESCRIPTION	NO REQUIRED
External Steel Doors to Stores, Elec Switch rooms and	N112 N113 N130	Butt Hinge with Bearing Mortice Sash Lock Pull Handles	2 per door 1 set per door 2 per door

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Pump Room			
Gallows Gate	N131	Shrouded Locking System	1 per gate

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Appendix A: List of References and Standards. (Part 1)

Item No.	Clause no.	Reference	Comment
1.	N.1	IS EN 942:2007	Timber in joinery – General requirements. (replaces IS EN 942:1996)
2.	N.4	IS 96:1976	Moisture content of timber for building. (added to clause N4)
3.	N.5	BS 8417:2011	Preservation of wood. Code of practice. (replaces BS 5589:1989)
4.	N.6	IS EN 15228:2009	Structural timber – Structural timber preservative treated against biological attack. (replaces 5268-5:1989)
5.	N.7	BS 5707:1997	Specification for preservatives in organic solvents.
6.	N.14	IS EN 1995-1-1:2005 + A1 2008, (includes Irish national annex 2010)	Eurocode 5: Design of timber structures – Part 1-1: General – common rules and rules for buildings (including Irish National Annex), (replaces IS 444:1998)
7.	N.14	IS 127:2002	Structural timber – Visual strength grading – sawn softwoods with rectangular cross-section.
8.	N.17	BS 1210:1963	Specification for wood screws (Still current but obsolescent.
9.	N.17	IS 97:1986	Wood screws.
10.	N.17	IS 97-2:1988	Wood screws – Part 2: screws with rolled threads. (typo date change)
11.	N.17	BS 1202-1:2002	Specification for nails – Steel nails.
12.	N.17	BS 1202-3:1974	Specification for nails – Aluminium nails.
13.	N.18	BS EN ISO 1461:2009	Hot dip galvanised coatings on fabricated iron and steel articles. Specifications and test methods. (to replace BS EN ISO 1461:1999)
14.	N.19	IS EN 845-1:2012 (+NA:2013)	Specification for ancillary components for masonry – Part 1: Wall ties, Tension straps, Hangers, and Brackets. (including Irish National Annex)
15	N.25	IS EN 13811:2003	Sherardising – Zinc diffusion coatings on ferrous products – Specification.
16.	N.41	IS EN 942:2007	Timber in joinery – General requirements (to replace IS EN 942:1996)
17.	N.42	BS 1186-2:1988	Timber for and workmanship in joinery. Specification for workmanship.
		BS 1186-3:1990	Timber for and workmanship in joinery. Specification for wood trim and its fixing.

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Appendix A: list of specifications and References... (Part 2)

Item No.	Clause no.	Reference	Comment
18.	N.42	BS 4787-1:1980	Internal and external wood doorsets, door leaves and frames. Specification for dimensional requirements.
19.	N.43	IS EN 636:2012	Plywood – Specifications.
20.	N.43	IS EN 314-2:1993	Plywood – Bonding Quality – Requirements.
21.	N.44	IS EN 622-1:2003	Fiberboards – Specifications – Part 1: General requirements.
		IS EN 622-5:2009	Fibreboard – Specifications – Part 5: Requirements for dry process boards (MDF) (to replace IS EN 622-5 2006)
22.	N.49	BS 476-22:1987	Fire tests on building and structures. Methods of determination of the fire resistance of non-load bearing elements of construction.
23.	N.51	IS 196-1:1983	Wood Doorsets – Dimensions.
		IS 196-4:1982	Paneled timber doors.
24.	N.51	BS 6375-1:2009	Performance of windows and doors. Classification for weather tightness and guidance on selection and specification.
25.	N.51	IS EN 12211:2000	Windows and doors. Resistance to wind load. Test method.
26.	N.51	IS EN 1026:2000	Windows and doors. Air permeability. Test method.
27.	N.51	IS EN 1027:2000	Windows and doors. Water tightness. Test method.
28.	N.52	IS 196-6:1986	Framed and sheeted timber doors (external)
29.	N.56	BS 644:2012	Timber windows and doorsets. Fully finished factory-assembled windows and doorsets of various types. Specification. (to replace BS 644:2009)
30.	N.56	IS 927-1:2013	Paints and Varnishes – coating materials and coating systems for exterior wood – Part 1: Classification and selection.
		IS 927-2:2006	Paints and Varnishes – Coating materials and coating systems for exterior wood Part 2: Performance specification.
31.	N.56	IS EN 10088-2:2005	Stainless Steels-Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes.

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Appendix A: List of Standards and References... (Part 3)

Item No.	Clause no.	Reference	Comment
32.	N.57	BS 585-1:1989	Wood Stairs. Specification for stairs with closed risers for domestic use, including straight and winder flights and quarter or half landings.
33.	N.57	BS 1186-2:1988	Timber for and Workmanship in joinery. Specification for Workmanship.
34.	N.68	BS 6222-2:2009	Domestic kitchen equipment. Fitted kitchen units, peninsular units, island units and breakfast bars.
35.	N.68	IS EN 312:2010	Particleboards – Specifications. (to replace IS EN 312:2003)
36.	N.68	IS EN 14322:2004	Wood-based panels – Melamine faced boards for interior uses – Definition, requirements and classification. (to replace BS 7331:1990)
37.	N.68	IS EN 438-1:2005	High pressure decorative laminates (HPL). Sheets based on thermosetting resin (usually called laminates) Introduction and general information.
40.	N.101	'Standards for Ironmongers' by the Guild of Architectural Ironmongery, 2004.	List of industry standards involving door and window ironmongery www.gai.org.uk
41.	N.112	IS EN 1935:2002 (COR:2004)	Building Hardware – Single-axis hinges – Requirements and test methods.
42.	N.114	IS EN 13724:2013	Postal services – Apertures of private letter boxes and letter plates – Requirements and test methods.
43.	N.116	IS EN 12365-1:2003	Building Hardware – Gasket and weather-stripping for doors for doors, windows, shutters and curtain walling – Part 1: Performance requirements and classification.
44.	N.121	IS EN 1906:2012	Building Hardware – Lever handles and knob furniture – Requirements and test methods.
45.	N.124	IS EN 12209:2004 (+COR:2005)	Building Hardware – Locks and Latches –Mechanically operated locks, latches and locking plates – Requirements and test methods.

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Appendix B: Amendments List	
Date of Amendment	Amendments
1/05/2014	This section was amended by Barry Sheils and approved by David Byrne, Senior Architect, Fingal County Council.
24/05/2016	Clause references in Schedules N1 to N4 inclusive were amended to refer to Clauses 101 to 136 (David Byrne, Senior Architect)