

# High Rise Flats – BNR Lift Motor Room Lindop Court

## Tender Documentation

13 January 2020

# Notice

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This document has 10 pages including the cover.

## Document history

Revision	Purpose description	Origin- ated	Checked	Reviewed	Author- ised	Date
Rev 1.0	High Rise Flats – BNR Lift Motor Room Lindop Court	JP	JP	DW	DW	13/01/20

## Client signoff

Client	Stoke On Trent City Council
Project	High Rise Flats – BNR Lift Motor Room Lindop Court
Job number	
Client signature / date	

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# High Rise Flats – BNR Lift Motor Rooms Lindop Court

## Pricing Documentation

1.1. To be read in conjunction with:

1.1.1. The drawing references; Lift Motor Room – Lindop Court 01-003 & BNR Lift Motor Room – Lindop Court 01-004

1.1.2. Pricing Schedule reference Schedule of Rates for High Rise Flats – Lift Motor Room Lindop Court

1.1.3. NBS Specification

1.2. The details contained within this document are based on the current information available and we will not be held responsible for unknown site conditions or the performance of new materials in the system design by others.

1.3. The requirements of all relevant British Standards, Industry Codes of Practice guidelines should be complied with at all times.

1.4. Before pricing the contractor should examine the drawings and documents, visit the site and ascertain all local conditions and restrictions, accessibility, the full extent and nature of the work, the supply and conditions affecting labour and the execution of the contract generally.

## 1.5. ACCESS AND SAFE WORKING

1.6. The Contractor shall ensure that they comply at all times with all current Health and Safety legislation. On any contract which involves site operations of 30 working days or more, or 500 or more total person hours, the contract will become notifiable under the CDM Regulations.

1.8. The Contractor is to note that access will be provided by the employer.

## 1.9. STORAGE AND SITE ACCOMMODATION

1.10. The Contractor shall allow for all costs in association with storage of materials, site accommodation and welfare. Location of storage arrangements shall be subject to agreement with the employer. All areas used for storage etc. must be reinstated to the clients satisfaction and at the Contractor's expense.

## 1.11. PLANT AND TOOLS

1.12. The Main Contractor / Sub Contractor shall provide all necessary plant, equipment, scaffolding, tools, dust sheets and everything else required for the safe and proper execution of the Contract. Details of safety procedures, training and method statements ensuring safe use of plant, tools and scaffolding are to be provided in the Health & Safety plan prior to commencement.

## 1.15. HEALTH, SAFETY AND WELFARE

1.16. The Contractor shall, during the whole course of the Contract, provide and maintain all necessary health, safety and welfare measures and amenities. The contractor shall comply with all the provisions laid down in the current regulations and any other enactment or regulation relating to the working rules of any industry for people employed on the site, including those employed by sub-contractors.

1.17. The Contractor will be required to produce a copy of his Safety Plan for inspection by the Contract Administrator.

#### 1.18. SANITARY FACILITIES

1.19. Any temporary facilities are to be removed leaving the site clean and tidy on completion. Under no circumstances should communal facilities be used for cleaning brushes, etc.

#### 1.20. WORK IN AND AROUND OCCUPIED PROPERTIES

1.21. The Contractor shall allow for carrying out the Works whilst the surrounding buildings are in occupation. The Contractor shall give all occupants adequate notice when the work is due to commence. Every care shall be taken to cause as little disturbance and nuisance as possible to other residents during the progress of the Works.

1.22. The Contractor shall bring to the attention of the relevant persons, structure of a temporary nature, planting etc. which requires removal prior to commencement of Works. The Contract Administrator should be informed immediately of any failure to co-operate in this respect.

1.23. The site shall be maintained free from hazards and obstructions which might endanger or inconvenience. Where this is not possible the Contractor shall provide and erect suitable barriers and warning signs.

1.24. The Contractor is to give consideration to avoiding any risks to residents/occupants and their visitors who will not have the benefit of protective clothing. Any operations which give rise to risks shall, as far as practicable, be confined to areas to which occupants/visitors do not have access. The Contractor shall make full provision of sheeting, hoardings and other temporary works and suitable alternative means of site access, egress and movement around and between areas where work is taking place. Any damage so caused shall be repaired at the Contractor's expense.

#### 1.25. PROTECTION OF THE WORKS

1.26. The Contractor shall allow for providing all necessary protection while the Works are in progress and shall make good, at his own expense, any damage to existing structures, finishes and landscaping to the client's satisfaction.

1.33. Detailed Health and Safety Procedures, together with method statements, must be submitted as part of the Health and Safety Plan with regard to any works to, removal of or disposal of Asbestos based products.

#### 1.34. CLEARANCE OF SITE

1.35. The Contractor shall: Remove from site all rubbish and superfluous material as it accumulates and maintain the whole area of the Works in a clean and tidy condition, free of obstructions and hazards. Make allowance for the proper and safe disposal of such material in full compliance with the current regulations.

# Appendices

# Appendix A.

## A.1. Schedule of Rates

# Bucknall New Road High Rise Flats - Lift Motor Room Repair Works - Lindop Court

## Schedule of Rates

### Front Elevation

<u>Ref</u>		<u>Quantity</u>	<u>Unit</u>	<u>Unit Rate</u> £	<u>Amount</u> £
2.1 A	Temporarily remove and safely re-fix fixed lighting conductor strips to temporary scaffolding. Allow to maintain lightening strips while temporarily removed, also then allow to re-fix to structure after completion of works.	1	Item		0.00
2.1 B	Temporarily remove and safely re-fix fixed external lights to temporary scaffolding. Allow to maintain external lights while temporarily removed, also then allow to re-fix back to structure after completion of works.	1	Item		0.00
2.1 C	The contractor is to allow for high pressure jet wash to the existing external masonry walls. This is to remove any bird fouling, paint, algae growth etc from the existing masonry. This is to be undertaken prior to the commencement of works.	13	m2		0.00
2.1 D	Remove existing fixed redundant hand rail fixings and dispose of accordingly.	1	Item		0.00
2.1 E	Allow to retain all anchor points currently fixed to external masonry.	1	Item		0.00
2.1 F	Allow for temporary scaffolding to facilitate works to all elevations of external brickwork, to include for sumped perimeter gully level deviations.	1	Item		0.00
2.1 G	Remove existing metal plates fixed to external wall and dispose of accordingly.	1	Item		0.00
2.1 H	Allow for carefully raking out existing areas of external brickwork to full elevation. Mortar to be raked out at a depth of 20mm causing no damage to brick, and all debris to be brushed from joints.	13	m2		0.00
2.1 J	All brickwork shall be neatly pointed, in a ready mixed lime:sand:cement masonry mortar to BS EN 998-2, lime should be nonhydraulic to BS EN 459-1, type CL 90S, all re-pointing should be jointed with a bucket handle finish. Finished brickwork must be clean and stain free on completion.	13	m2		0.00
2.1 K	Allow to infill redundant fixing holes via paristaltic pump and gun. Mortar colour to match as near to existing brickwork and in accordance with BS 5628: Part 1 for mortar designation.	7	nr		0.00
2.1 L	Where wiring enters brickwork, allow for a polysulphide mastic sealant to be installed to full perimeter of penetration to achieve a weathertight finish, using a paristaltic pump and gun.	1	Item		0.00
2.1 M	Neatly cut out existing exposed section of timber fascia board and cap off underside with UPVC capping strip.	7	m		0.00
2.1 N	Allow for general cleaning of all external masonry after the completion of works.	13	m2		0.00
2.1 P	The roofers are to cut out all blisters to the central gutter around the tank room. All areas which contain water are to be fully dried out prior to the new Garland Flex Plus Gap Sheet being installed. Where possible the cap sheet is to be jointed to the existing laps to aid drainage. It may be necessary to temporarily remove and reinstate the Plastisol metal cover flashing's in places at the base of the plant rooms.	1	Item		0.00
2.1 Q	Note - Contractor will be working around significant tele communication cabling, access ladders and the like.				
<b><u>Total</u></b>					<b><u>0.00</u></b>



## High Rise Flats - Lift Motor Room Refurbishment - Lindop Court

### Schedule of Rates

#### Right Elevation

<u>Ref</u>		Quantity	Unit	Unit Rate £	Amount £
2.2 A	The contractor is to allow for high pressure jet wash to the existing external masonry walls. This is to remove any bird fouling, paint, algae growth etc from the existing masonry. This is to be undertaken prior to the commencement of works.	11	m2		0.00
2.2 B	Allow to retain all anchor points currently fixed to external masonry.	1	Item		0.00
2.2 C	Allow for temporary scaffolding to facilitate works to all elevations of external brickwork, to include for sumped perimeter gully level deviations.	1	Item		0.00
2.2 D	Remove existing sealant and install plastic vent covering, allow to mechanically fix to wall with A4 marine grade stainless steel polytop shank nails.	1	nr		0.00
2.2 E	Remove all plastic cable ties and dispose off accordingly. Allow to fix existing loose cabling to the external face with new proprietary clips.	1	Item		0.00
2.2 F	Allow for carefully raking out existing areas of external brickwork to full elevation. Mortar to be raked out at a depth of 20mm causing no damage to brick, and all debris to be brushed from joints.	11	m2		0.00
2.2 G	All brickwork shall be neatly pointed, in a ready mixed lime:sand:cement masonry mortar to BS EN 998-2, lime should be nonhydraulic to BS EN 459-1, type CL 90S, all re-pointing should be jointed with a bucket handle finish. Finished brickwork must be clean and stain free on completion.	11	m2		0.00
2.2 H	Allow to infill redundant fixing holes via paristaltic pump and gun. Mortar colour to match as near to existing brickwork and in accordance with BS 5628: Part 1 for mortar designation.	5	nr		0.00
2.2 J	Carefully remove and replace single damaged bricks on the external elevation. Allow for using hammer and bolster. Ensure that new bricks match existing in size, colour and general appearance. Bricks to be laid on a full bed of mortar and be plumb and true. As shown on drawing ref 'Lindop Court - Left/Right - 01-004'	2	nr		0.00
2.2 K	Where wiring enters brickwork, allow for a polysulphide mastic sealant to be installed to full perimeter of penetration to achieve a weathertight finish, using a paristaltic pump and gun.	1	Item		0.00
2.2 L	Neatly cut out existing exposed section of timber fascia board and cap off underside with UPVC capping strip.	5	m		0.00
2.2 M	Allow for general cleaning of all external masonry after the completion of works.	11	m2		0.00
<b><u>Total</u></b>					<b><u>0.00</u></b>

## High Rise Flats - Lift Motor Room Refurbishment - Lindop Court

### Schedule of Rates

#### Rear Elevation

<u>Ref</u>		Quantity	Unit	Unit Rate £	Amount £
2.3 A	Temporarily remove and safely re-fix fixed lighting conductor strips to temporary scaffolding. Allow to maintain lightening strips while temporarily removed, also then allow to re-fix to structure after completion of works.	1	Item		0.00
2.3 B	Temporarily remove and safely re-fix fixed external lights to temporary scaffolding. Allow to maintain external lights while temporarily removed, also then allow to re-fix back to structure after completion of works.	1	Item		0.00
2.3 C	The contractor is to allow for high pressure jet wash to the existing external masonry walls. This is to remove any bird fouling, paint, algae growth etc from the existing masonry. This is to be undertaken prior to the commencement of works.	13	m2		0.00
2.3 D	Remove existing fixed redundant hand rail fixings and dispose of accordingly.	1	Item		0.00
2.3 E	Allow to retain all anchor points currently fixed to external masonry.	1	Item		0.00
2.3 F	Allow for temporary scaffolding to facilitate works to all elevations of external brickwork, to include for sumped perimeter gully level deviations.	1	Item		0.00
2.3 G	Remove all plastic cable ties and dispose off accordingly. Allow to fix existing loose cabling to the external face with new proprietary clips.	1	Item		0.00
2.3 H	Allow for carefully raking out existing areas of external brickwork to full elevation. Mortar to be raked out at a depth of 20mm causing no damage to brick, and all debris to be brushed from joints.	13	m2		0.00
2.3 J	All brickwork shall be neatly pointed, in a ready mixed lime:sand:cement masonry mortar to BS EN 998-2, lime should be nonhydraulic to BS EN 459-1, type CL 90S, all re-pointing should be jointed with a bucket handle finish. Finished brickwork must be clean and stain free on completion.	13	m2		0.00
2.3 K	Carefully remove and replace single damaged bricks on the external elevation. Allow for using hammer and bolster. Ensure that new bricks match existing in size, colour and general appearance. Bricks to be laid on a full bed of mortar and be plumb and true. As shown on drawing ref 'Lindop Court - F/R - 01-003'	2	nr		0.00
2.3 L	Stitch repairs to cracking. Rake out mortar to fully expose crack in locations identified on drawing ref 'Lindop Court - F/R - 01-003'. Install 20mm wide x 3.0mm thick stainless steel flat ties at max 225mm centres across path of the crack, where possible to extend min 150mm either side. Alternatively install stainless steel tie rods, e.g. Helibar in grooved slots within the wall thickness at 225mm centres and repoint on completion with a designation mortar mix as previously specified. Stepped cracking in this instance spreads across 3 courses.	1	Item		0.00
2.3 M	Allow to infill redundant fixing holes via paristaltic pump and gun. Mortar colour to match as near to existing brickwork and in accordance with BS 5628: Part 1 for mortar designation.	5	nr		0.00
2.3 N	Where wiring enters brickwork, allow for a polysulphide mastic sealant to be installed to full perimeter of penetration to achieve a weathertight finish, using a paristaltic pump and gun.	1	Item		0.00
2.3 P	Neatly cut out existing exposed section of timber fascia board and cap off underside with UPVC capping strip.	7	m		0.00
2.3 Q	Allow for general cleaning of all external masonry after the completion of works.	13	m2		0.00
<b><u>Total</u></b>					<b><u>0.00</u></b>

## High Rise Flats - Lift Motor Room Refurbishment - Lindop Court

### Schedule of Rates

#### Left Elevation

<u>Ref</u>		Quantity	Unit	Unit Rate £	Amount £
2.4 A	Temporarily remove and safely re-fix fixed lighting conductor strips to temporary scaffolding. Allow to maintain lightening strips while temporarily removed, also then allow to re-fix to structure after completion of works.	1	Item		0.00
2.4 B	Temporarily remove and safely re-fix fixed external lights to temporary scaffolding. Allow to maintain external lights while temporarily removed, also then allow to re-fix back to structure after completion of works.	1	Item		0.00
2.4 C	Temporarily remove, re-locate and safety store Antenna fixing. Allow to maintain current usage/signal while temporarily removed then allow to re-fix after completion of works.	1	Item		0.00
2.4 D	The contractor is to allow for high pressure jet wash to the existing external masonry walls. This is to remove any bird fouling, paint, algae growth etc from the existing masonry. This is to be undertaken prior to the commencement of works.	11	m2		0.00
2.4 E	Allow to retain all anchor points currently fixed to external masonry.	1	Item		0.00
2.4 F	Allow for temporary scaffolding to facilitate works to all elevations of external brickwork, to include for sumped perimeter gully level deviations.	1	Item		0.00
2.4 G	Remove all plastic cable ties and dispose off accordingly. Allow to fix existing loose cabling to the external face with new proprietary clips.	1	Item		0.00
2.4 H	Allow for carefully raking out existing areas of external brickwork to full elevation. Mortar to be raked out at a depth of 20mm causing no damage to brick, and all debris to be brushed from joints.	11	m2		0.00
2.4 J	All brickwork shall be neatly pointed, in a ready mixed lime:sand:cement masonry mortar to BS EN 998-2, lime should be nonhydraulic to BS EN 459-1, type CL 90S, all re-pointing should be jointed with a bucket handle finish. Finished brickwork must be clean and stain free on completion.	11	m2		0.00
2.4 K	Allow to infill redundant fixing holes via peristaltic pump and gun. Mortar colour to match as near to existing brickwork and in accordance with BS 5628: Part 1 for mortar designation.	2	nr		0.00
2.4 L	Carefully remove and replace single damaged bricks on the external elevation. Allow for using hammer and bolster. Ensure that new bricks match existing in size, colour and general appearance. Bricks to be laid on a full bed of mortar and be plumb and true. As shown on drawing ref 'Lindop Court - Left/Right - 01-004'	4	nr		0.00
2.4 M	Stitch repairs to cracking. Rake out mortar to fully expose crack in locations identified on drawing ref 'Lindop Court - Left/Right - 01-004'. Install 20mm wide x 3.0mm thick stainless steel flat ties at max 225mm centres across path of the crack, where possible to extend min 150mm either side. Alternatively install stainless steel tie rods, e.g. Helibar in grooved slots within the wall thickness at 225mm centres and repoint on completion with a designation mortar mix as previously specified. Stepped cracking in this instance spreads across 6 courses.	1	Item		0.00
2.4 N	Where wiring enters brickwork, allow for a polysulphide mastic sealant to be installed to full perimeter of penetration to achieve a weathertight finish, using a peristaltic pump and gun.	1	Item		0.00
2.4 P	Neatly cut out existing exposed section of timber fascia board and cap off underside with UPVC capping strip.	5	m		0.00
2.4 Q	Allow to paint metal vent fixing with a black metal external paint.	1	Item		0.00
2.4 R	Allow for general cleaning of all external masonry after the completion of works.	11	m2		0.00
<b><u>Total</u></b>					<b><u>0.00</u></b>

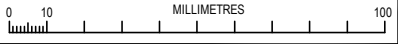
**Bucknall New Road High Rise Flats - Lift Motor Room Repair Works - Lindop Court**

**Schedule of Rates Summary**

<b><u>Description</u></b>	<b>Cost £</b>
Front Elevation	0.00
Right Elevation	0.00
Rear Elevation	0.00
Left Elevation	0.00
	0.00
Prelims	0.00
	0.00
<b><i>Total</i></b>	<b>0.00</b>

# Appendix B.

## B.1. Associated Drawings



Front Elevation

Temporarily remove and safely re-fix fixed lighting conductor strips to temporary scaffolding. Allow to maintain lightening strips while temporarily removed, also then allow to re-fix to structure after completion of works. (As per reference 2.1A, photo reference 2)

Temporarily remove and safely re-fix fixed external lights to temporary scaffolding. Allow to maintain external lights while temporarily removed, also then allow to re-fix to structure after completion of works. (As per reference 2.1B)

Remove existing metal plates fixed to external wall and dispose of accordingly. (As per reference 2.1G, photo reference 3)

Allow to retain all anchor points currently fixed to external masonry. (As per reference 2.1E)

Roof felt and Insulation

Concrete Floor Deck

Front Elevation

Allow to infill redundant fixing holes via paristaltic pump and gun. Mortar colour to match as near to existing brickwork and in accordance with BS 5628: Part 1 for mortar designation. (As per reference 2.1K)

Where wiring enters brickwork, allow for a polysulphide mastic sealant to be installed to full perimeter to achieve a weathertight finish, using a paristaltic pump and gun. (As per reference 2.1L)

Neatly Cut out existing exposed section of timber fascia board to the elevation and allow to cap off underside with PVC capping strip. (As per reference 2.1M)

The contractor is to allow for high pressure jet wash to the existing external masonry walls. This is to remove any bird fouling, paint, algae growth etc from the existing masonry. This is to be undertaken prior to the commencement of works. (As per reference 2.1C)

Allow for carefully raking out existing areas of external brickwork to full elevation. Mortar to be raked out at a depth of 20mm causing no damage to brick, and all debris to be brushed from joints. (As per reference 2.1H)

All brickwork shall be neatly pointed, in a ready mixed lime:sand:cement masonry mortar to BS EN 998-2, lime should be nonhydraulic to BS EN 459-1, type CL 90S, all re-pointing should be jointed with a bucket handle finish. Finished brickwork must be clean and stain free on completion. (As per reference 2.1J)

Remove existing fixed redundant hand rail fixings and dispose of accordingly. (As per reference 2.1D)

Allow for cleaning of all external masonry after the completion of works. (As per reference 2.1N)

The roofers are to cut out all blisters to the central gutter around the tank room. All areas which contain water are to be fully dried out prior to the new Garland Flex Plus Gap Sheet being installed.

Where possible the cap sheet to be but jointed to the existing laps to aid drainage. It may be necessary to temporarily remove and reinstate the Plastisol metal cover flashing's in places at the base of the plant rooms. (As per reference 2.1P)

Temporarily remove and safely re-fix fixed lighting conductor strips to temporary scaffolding. Allow to maintain lightening strips while temporarily removed, also then allow to re-fix to structure after completion of works. (As per reference 2.3A)

Temporarily remove and safely re-fix fixed external lights to temporary scaffolding. Allow to maintain external lights while temporarily removed, also then allow to re-fix to structure after completion of works. (As per reference 2.3B)

Where wiring enters brickwork, allow for a polysulphide mastic sealant to be installed to full perimeter to achieve a weathertight finish, using a paristaltic pump and gun. (As per reference 2.3N)

Neatly cut out existing exposed section of timber fascia board and cap off underside with UPVC capping strip. (As per reference 2.3P)

Allow for cleaning of all external masonry after the completion of works. (As per reference 2.3Q)

Stitch repairs to cracking. Rake out mortar to fully expose crack in locations identified on drawing reference 01-003. Install 20mm wide x 3.0mm thick stainless steel flat ties at max 225mm centres across path of the crack, where possible to extend min 150mm either side. Alternatively install stainless steel tie rods, e.g. Helibar in grooved slots within the wall thickness at 225mm centres and repoint on completion with a designation mortar mix as previously specified. Stepped cracking in this instance spreads across 3 courses. (As per reference 2.3L)

The roofers are to cut out all blisters to the central gutter around the tank room. All areas which contain water are to be fully dried out prior to the new Garland Flex Plus Gap Sheet being installed.

Where possible the cap sheet to be but jointed to the existing laps to aid drainage. It may be necessary to temporarily remove and reinstate the Plastisol metal cover flashing's in places at the base of the plant rooms. (As per reference 2.3)

Carefully remove and replace single damaged bricks on the external elevation. Allow for using hammer and bolster. Ensure that new bricks match existing in size, colour and general appearance. Bricks to be laid on a full bed of mortar and be plumb and true. (As shown on drawing reference 01-003, 2.3K)

Allow to infill redundant fixing holes via paristaltic pump and gun. Mortar colour to match as near to existing brickwork and in accordance with BS 5628: Part 1 for mortar designation. (As per reference 2.3M)

Remove all plastic cable ties and dispose off accordingly. Allow to fix existing cabling to the external face with new proprietary clips. (As per reference 2.3G)

All brickwork shall be neatly pointed, in a ready mixed lime:sand:cement masonry mortar to BS EN 998-2, lime should be nonhydraulic to BS EN 459-1, type CL 90S, all re-pointing should be jointed with a bucket handle finish. Finished brickwork must be clean and stain free on completion. (As per reference 2.3J)

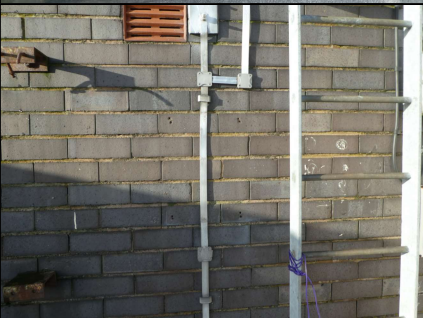
Allow for carefully raking out existing areas of external brickwork to full elevation. Mortar to be raked out at a depth of 20mm causing no damage to brick, and all debris to be brushed from joints. (As per reference 2.3H)

The contractor is to allow for high pressure jet wash to the existing external masonry walls. This is to remove any bird fouling, paint, algae growth etc from the existing masonry. This is to be undertaken prior to the commencement of works. (As per reference 2.3C)

Rear Elevation

Remove existing fixed redundant hand rail fixings and dispose of accordingly. (As per reference 2.3D)

Allow to retain all anchor points currently fixed to external masonry. (As per reference 2.3E)



Hatch Key	
	Brickwork
	Redundant Fixing Holes
	Anchor Points
	Stepped Cracking
	Redundant Handrail Fix
	Incoming services

NOTES

- DO NOT SCALE FROM THIS DRAWING.
- ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION AND ALL RELEVANT ARCHITECTURAL, ELECTRICAL, MECHANICAL AND STRUCTURAL DRAWINGS.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

For details of site-wide and general risks, to be read in conjunction with these notes, see the contract documents and, where works are notifiable, the pre-construction information pack issued by the CDM co-ordinator

In addition to the risks normally associated with the types of work detailed on this drawing, note the following risks and information:

CONSTRUCTION

CI.

CII.

CIII.

CIV.

DISMANTLING / DEMOLITION (Future)

DI.

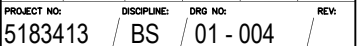
DII.

DIII.

DIV.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement





# Appendix C.

## C.1. NBS Specification



## **C41 REPAIRING/ RENOVATING/ CONSERVING MASONRY**

To be read with Preliminaries/ General conditions.

### **GENERAL/ PREPARATION**

#### **110 SCOPE OF WORK**

- Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
- Identification of masonry units to be removed, replaced or repaired: Mark clearly, but not indelibly, on face of masonry units or parts of units to be cut out and replaced. Transcribe markings to drawings/ photographs.

#### **120 SITE INSPECTION**

- Purpose: To confirm type and extent of repair/ renovation/ conservation work shown on drawings and described in survey reports and schedules of work.

#### **125 REMOVAL OF FITTINGS/ FIXTURES**

- Items to be removed and reinstated on completion of repair work: refer to schedule of works.
  - Identification: Attach labels or otherwise mark items using durable, non-permanent means, to identify location and describe refixing instructions, where applicable.
  - Storage: Protect against damage, and store until required.
  - Reinstatement: Refit in original locations using original installation methods.
- Masonry fabric and surfaces: Do not damage during removal and replacement of fittings/ fixtures.

#### **130 REMOVAL OF PLANT GROWTHS FROM MASONRY**

- Plants, root systems and associated soil/ debris: Carefully remove from joints, voids and facework.
- Removal of roots: Where growths cannot be removed completely without disturbing masonry seek instructions.
- Unwanted plants close to masonry: Where removal of root system is not possible or desirable, cut through stem as close to the ground as possible. Remove bark from stump and apply herbicide paste. Leave stump to wither.

#### **140 RECORD OF WORK**

- General: Record work carried out to masonry clearly and accurately using written descriptions, sketches, drawings and photographs, as necessary.
- Documentation: Submit on completion of the work.
  - Number of sets: 2.

### **WORKMANSHIP GENERALLY**

#### **150 POWER TOOLS**

- Usage for removal of mortar: rake out defective mortar by mechanical means to a depth of 20mm.

#### **155 PUTLOG SCAFFOLDING**

- Usage: N/A.

#### **160 PROTECTION OF MASONRY UNITS AND MASONRY**

- Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided.

- Masonry: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/ grout splashes and other staining and marking on facework. Protect using suitable nonstaining slats, boards, tarpaulins, etc. Remove protection on completion of the work.
- 165     **STRUCTURAL STABILITY**
- General: Maintain stability of masonry. Report defects, including signs of movement, that are exposed or become apparent during the removal of masonry units.
- 170     **DISTURBANCE TO RETAINED MASONRY**
- Retained masonry in the vicinity of repair works: Disturb as little as possible.
  - Existing retained masonry: Do not cut or adjust to accommodate new or reused units.
  - Retained loose masonry units and those vulnerable to movement during repair works: Prop or wedge so as to be firmly and correctly positioned.
- 180     **WORKMANSHIP**
- Skill and experience of site operatives: Appropriate for types of work on which they are employed.
  - Documentary evidence: Submit on request.
- 185     **ADVERSE WEATHER**
- General: Do not use frozen materials or lay masonry units on frozen surfaces.
  - Air temperature: Do not bed masonry units or repoint:
    - In cement gauged mortars when ambient air temperature is at or below 3°C and falling or unless it is at least 1°C and rising, unless mortar has a minimum temperature of 4°C when laid and the masonry is adequately protected.
    - In hydraulic lime:sand mortars when ambient air temperature is at or below 5°C and falling or unless it is at least 3°C and rising.
    - In nonhydraulic lime:sand mortars in cold weather, unless approval is given.
  - Temperature of the work: Maintain above freezing until mortar has fully set.
  - Rain, snow and dew: Protect masonry by covering during precipitation, and at all times when work is not proceeding.
  - Hot conditions and drying winds: Prevent masonry from drying out rapidly.
  - New mortar damaged by frost: Rake out and replace.
- 190     **CONTROL SAMPLES**
- General: Complete an area of each of the following types of work, and arrange for inspection before proceeding with the remainder: mortar repairs, brickwork panels for forming new external doorways, external wall insulation final render coat, brick slips.

## **MATERIALS/ PRODUCTION/ ACCESSORIES**

- 210     **ADVANCE REGISTRATION**
- Material registered in advance by the Employer: Obtain from the supplier named in Preliminaries section A56.
  - Ordering: Supersede the Employer's registration and take over responsibility by an order to the supplier covering price, supply and delivery to suit the progress of the work.
- 215     **MATERIAL SAMPLES**
- Representative samples of designated materials: Submit before placing orders.
  - Designated materials: external wall insulation render finish, brick slips, roof tiles.
  - Retention of samples: Unless instructed otherwise, retain samples on site for reference. Protect from damage and contamination.
- 220     **RECORDING PROFILES**
- Profiles: Take measurements from existing masonry units, as instructed, to allow accurate matching of replacements.
  - Recording in situ: If there are no suitable joints to allow use of inserts, seek instructions.

- Drawings and templates: Prepare as necessary. Templates must be clearly and indelibly marked to identify use and location.

## 260 BRICKS

- To match the existing to employers approval.

## 265 SALVAGED AND SECOND HAND BRICKS

- Condition:
  - Free from matter such as mortar, plaster, paint, bituminous materials and organic growths.
  - Sound, clean and reasonably free from cracks and chipped arrises.

### **DISMANTLING/ REBUILDING**

## 310 DISMANTLING MASONRY FOR REUSE

- Masonry units to be reused: Remove carefully and in one piece.
  - Treatment: Clean off old mortar, organic growths and dirt, and leave units in a suitable condition for rebuilding.
  - Identification: Mark each unit clearly and indelibly on a concealed face, indicating its original position in the construction. Transcribe markings to drawings/ photographs.

## 320 REBUILDING

- Rebuilding: To match previous face and joint lines, joint widths and bonding. Adequately bonded to retained work/ backing masonry, as appropriate.
- Joint surfaces: Dampen, as necessary, to control suction.
- Laying masonry units: On a full bed of mortar; perpend joints filled.
- Exposed faces: Remove mortar and grout splashes immediately.

### **REPLACEMENTS AND INSERTIONS**

## 330 PREPARATION FOR REPLACEMENT MASONRY

- Defective material: Carefully remove to the extent agreed. Do not disturb, damage or mark adjacent retained masonry.
- Existing metal fixings, frame members, etc: Report when exposed.
- Redundant metal fixings: Remove.
- Recesses: Remove projections and loose material; leave joint surfaces in a suitable condition to receive replacement units. Protect from adverse weather if units are not to be placed immediately.

## 365 REPLACEMENT OF BRICKS

## 385 LAYING REPLACEMENT MASONRY UNITS

- Exposed faces of new material: Keep to agreed face lines.
- Faces, angles and features: Align accurately. Set out carefully to ensure satisfactory junctions with existing masonry and maintain existing joint widths.
- Joint surfaces: Dampen to control suction as necessary.
- Laying units: On a full bed of mortar, all joints filled.
- Exposed faces: Keep clear of mortar and grout.

## 390 GROUTING JOINTS

- Joints that cannot be fully filled with bedding mortar: Grout thoroughly around replacement masonry units.
- Grouting: Keep grout back from exposed face to allow for the depth of pointing, using an approved temporary sealing material. Prevent grout staining exposed face.

### **MORTAR REPAIRS**

## 510 PREPARATION FOR MORTAR REPAIRS

- Repair area: Scribe area of masonry to be removed using straight horizontal and vertical lines parallel to joints. Where repair area abuts joints, maintain existing joint widths and do not bridge joints.
- Decayed masonry: Cut back carefully to a minimum depth of 20 mm to a sound background. Where the depth of removal exceeds 50 mm, seek instructions.
- Precautions: Do not weaken masonry by removing excessive material. Do not damage adjacent masonry.
- Top and vertical reveals of repair area: Undercut.

#### 540 APPLYING MORTAR

- Surfaces to receive mortar: Clean, and free from dust and debris. Dampen to control suction.
- Applying coats: Build up in layers to specified thickness. Apply mortar firmly, ensuring good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines.  
Allow each layer to achieve an initial set before applying subsequent coats. Prevent each layer from drying out rapidly by covering immediately with plastics sheeting and/ or dampening intermittently with clean water.
- Finishing mortar coat: Form accurately to required planes/ profiles, and finish flush with adjacent masonry.
- Protection: Protect completed repairs from adverse weather until mortar has set.

#### 550 SCRAPED FINISH TO MORTAR REPAIRS

- Procedure: Finish final coat of repair mortar proud of existing masonry face. When mortar is set, but not too hard, scrape back to required face line using fine saw blade or other suitable means, to achieve required finish.

#### 555 FLOAT FINISH TO MORTAR REPAIRS

- Finish: Use a wood float and/ or a felt faced float to give an even overall texture. Do not use steel floats.

### **CRACK REPAIRS/ TIES/ REINFORCEMENT**

#### 610 MORTAR REPAIR OF CRACKS

- Mortar: As section Z21.
- Preparation: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
- Applying mortar: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces. Finish mortar flush with masonry face.
- Other requirements: N/A.

### **POINTING/ REPOINTING**

#### 810 PREPARATION FOR REPOINTING

- Existing mortar: Working from top of wall downwards, remove mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth of \_\_\_\_\_.  
  - Loose or friable mortar: Seek instructions when mortar beyond specified recess depth is loose or friable and/ or if cavities are found.
- Raked joints: Remove dust and debris.

#### 840 POINTING WITH TOOLS/ IRONS

- General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled.
- Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side of joints where necessary. Finish joints neatly.

## **F10 BRICK/ BLOCK WALLING**

To be read with Preliminaries/ General conditions.

### **TYPES OF WALLING**

#### **110 CLAY FACING BRICKWORK**

- Bricks: To BS 3921:1985. 215x102.5x65mm with a dimensional accuracy Guarantee which states that 90% of all facing bricks will have a face dimension of no more than plus or minus 3mm from 215mm when measured 10mm back, using callipers, from the face of the brick.
- The durability designation of the bricks is to be FL
- The minimum compressive strength of the bricks is to be  $\geq 40\text{N/mm}^2$ .
- The maximum water absorption of the bricks is to be  $\leq 10\%$  by weight.
- The initial rate of suction for the bricks is  $0.3\text{kg/m}^2/\text{min}$
- Manufacturer: Contractors choice or Ibstock Brick Limited  
Leicester Road, Ibstock,  
Leicestershire  
LE67 6HS  
Product reference: Bexhill Dark or Red facing brickwork to closely match existing.
- Mortar: cement lime mortar to match existing.
- Bond: Unless otherwise noted and/or drawn – Half lap stretcher.
- Joints: 10mm Bucket Handle.

### **WORKMANSHIP GENERALLY**

#### **440 CONDITIONING OF CONCRETE BRICKS/ BLOCKS**

- Autoclaved concrete bricks/ blocks delivered warm from manufacturing process: Do not use.
- Age of nonautoclaved concrete bricks/ blocks: Do not use until at least four weeks old.
- Avoidance of suction in concrete bricks/ blocks: Do not wet.
  - Use of water retaining mortar admixture: Submit details.

#### **460 MORTAR GROUPS**

- Mix proportions: For a specified group select a mix design from the following:
  - Group 1:
    - 1:0–0.25:3 (Portland cement:lime:sand with or without air entraining additive).
    - 1:3 (Portland cement:sand and air entraining additive).
  - Group 2:
    - 1:0.5:4–5 (Portland cement:lime:sand with or without air entraining additive).
    - 1:3 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    - 1:2.5–3.5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    - 1:3–4 (Portland cement:sand and air entraining additive.)
  - Group 3:
    - 1:1:5–6 (Portland cement:lime:sand with or without air entraining additive).
    - 1:3.5–4 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    - 1:4–5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    - 1:5–6 (Portland cement:sand and air entraining additive).
  - Group 4:
    - 1:2:8–9 (Portland cement:lime:sand with or without air entraining additive).
    - 1:4.5 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    - 1:5.5–6.5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    - 1:7–8 (Portland cement:sand and air entraining additive).

- Batching: Mix proportions by volume.
  - Mortar type: Continuous throughout any one type of masonry work.
- 500 LAYING GENERALLY
- Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
  - AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
    - Clay block joints:
      - Thin layer mortar: Lay blocks on a full bed.
      - Interlocking perpend: Butted.
  - Bond where not specified: Half lap stretcher.
  - Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.
- 520 ACCURACY
- Courses: Level and true to line.
  - Faces, angles and features: Plumb.
  - Permissible deviations:
    - Position in plan of any point in relation to the specified building reference line and/ or point at the same level  $\pm 10$  mm.
    - Straightness in any 5 m length  $\pm 5$  mm.
    - Verticality up to 3 m height  $\pm 10$  mm.
    - Verticality up to 7 m height  $\pm 14$  mm.
    - Overall thickness of walls  $\pm 10$  mm.
    - Level of bed joints up to 5 m (brick masonry)  $\pm 11$  mm.
    - Level of bed joints up to 5 m (block masonry)  $\pm 13$  mm.
- 635 JOINTING
- Profile: Consistent in appearance.
- 645 ACCESSIBLE JOINTS NOT EXPOSED TO VIEW
- Jointing: Struck flush as work proceeds.
- 665 POINTING
- Joint preparation: Remove debris. Dampen surface.
  - Mortar: As section Z21.
- 690 ADVERSE WEATHER
- General: Do not use frozen materials or lay on frozen surfaces.
  - Air temperature requirements: Do not lay bricks/ blocks:
    - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
    - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
    - In thin joint mortar glue when outside the limits set by the mortar manufacturer.
  - Temperature of walling during curing: Above freezing until hardened.
  - Newly erected walling: Protect at all times from:
    - Rain and snow.
    - Drying out too rapidly in hot conditions and in drying winds.

#### **ADDITIONAL REQUIREMENTS FOR FACEWORK**

- 710 THE TERM FACEWORK
- Definition: Applicable in this specification to brick/ block walling finished fair.
    - Painted facework: The only requirement to be waived is that relating to colour.
- 750 COLOUR CONSISTENCY OF MASONRY UNITS

- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
- Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
- Finished work: Free from patches, horizontal stripes and racking back marks.

#### 760 APPEARANCE

- Brick/ block selection: Do not use units with damaged faces or arrises.
- Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
- Quality control: Lay masonry units to match relevant reference panels.
  - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
  - Coursing: Evenly spaced using gauge rods.
- Lifts: Complete in one operation.
- Methods of protecting facework: Submit proposals.

#### 780 GROUND LEVEL

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

#### 790 PUTLOG SCAFFOLDING

- Use: Not permitted in facework.

#### 800 TOOTHED BOND

- New and existing facework in same plane: Bond together at every course to achieve continuity.

#### 830 CLEANLINESS

- Facework: Keep clean.
- Mortar on facework: Allow to dry before removing with stiff bristled brush.
- Removal of marks and stains: Rubbing not permitted.

### **P31 HOLES, CHASES, COVERS AND SUPPORTS FOR SERVICES**

#### **10 HOLES, RECESSES AND CHASES IN MASONRY**

- Locations: To maintain integrity of strength, stability and sound resistance of construction.
- Sizes: Minimum needed to accommodate services.
  - Holes (maximum): 300 mm<sup>2</sup>.
- Walls of hollow or cellular blocks: Do not chase.
- Walls of other materials:
  - Vertical chases: No deeper than one third of single leaf thickness, excluding finishes.
  - Horizontal or raking chases: No longer than 1 m. No deeper than one sixth of the single leaf thickness, excluding finishes.
- Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness.
- Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Avoid spalling, cracking and other damage to surrounding structure.

#### **20 NOTCHES AND HOLES IN STRUCTURAL TIMBER**

- General: Avoid if possible.
- Sizes: Minimum needed to accommodate services.
- Position: Do not locate near knots or other defects.
- Notches and holes in same joist: Minimum 100 mm apart horizontally.
- Notches in joists:
  - Position: Locate at top. Form by sawing down to a drilled hole.
  - Depth (maximum): 0.15 x joist depth.
  - Distance from supports: Between 0.7 and 0.2 x span.
- Holes in joists:
  - Position: Locate on neutral axis.
  - Diameter (maximum): 0.25 x joist depth.
  - Centres (minimum): 3 x diameter of largest hole.
  - Distance from supports: Between 0.25 and 0.4 of span.
- Notches in roof rafters, struts and truss members: Not permitted.
- Holes in struts and columns: Locate on neutral axis.
  - Diameter (maximum): 0.25 x minimum width of member.
  - Centres (minimum): 3 x diameter of largest hole.
  - Distance from ends: Between 0.25 and 0.4 of span.

#### **30 PIPE SLEEVES**

- Material: Match pipeline.
- Sleeves: Extend through full thickness of wall or floor. Position accurately.
  - Clearance around service (maximum): 20 mm or diameter of service, whichever is the lesser.
- Installation: Bed solid.



## **Z20    FIXINGS AND ADHESIVES**

### **10    FIXINGS AND FASTENERS GENERALLY**

- Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
- Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers or sleeves to avoid bimetallic corrosion.
- General usage: To recommendations of fastener manufacturers and/ or manufacturers of components, products or materials fixed and fixed to.
- Fixings: To be in straight lines, at regular centres.

### **25    FASTENER DURABILITY**

- Materials: To have:
  - Bimetallic corrosion resistance appropriate to items being fixed.
  - Atmospheric corrosion resistance appropriate to fixing location.
- Appearance: Submit samples on request.

### **30    FIXINGS THROUGH FINISHES**

- Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

### **35    PACKINGS**

- Materials: Noncompressible, corrosion proof.
- Area of packings: Sufficient to transfer loads.

### **40    CRAMP FIXINGS**

- Fasteners: Fix cramps to frames with screws of same material as cramps.
- Fixings in masonry work: Fully bed in mortar.

### **50    PELLETED COUNTERSUNK SCREW FIXINGS**

- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
- Pellets: Cut from matching timber, grain matched, glued in to full depth of hole.
- Finished level of pellets: Flush with surface.

### **55    PLUGGED COUNTERSUNK SCREW FIXING**

- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
- Plugs: Glue in to full depth of hole.
- Finished level of plugs: Projecting above surface.

### **60    APPLYING ADHESIVES**

- Surfaces: Clean. Regularity and texture to suit bonding and gap filling characteristics of adhesive.
- Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
- Finished adhesive joints: Fully bonded. Free of surplus adhesive.

## **Z21 MORTARS**

### **10 MORTAR MIXES**

- Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

### **20 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS**

- Standard: To BS EN 13139.
- Grading: 0/2 (FP or MP).
  - Fines content where the proportion of sand is specified as a range (e.g. 1:1: 5-6):
    - Lower proportion of sand: Use category 3 fines.
    - Higher proportion of sand: Use category 2 fines.
- Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

### **25 SAND FOR LIME:SAND MASONRY MORTARS**

- Type: Sharp, well graded.
  - Quality, sampling and testing: To BS EN 13139.
  - Grading/ Source: As specified elsewhere.

### **30 READY-MIXED LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS**

- Standard: To BS EN 998-2.
- Lime: Nonhydraulic to BS EN 459-1.
  - Type: CL 90S.
- Pigments for coloured mortars: To BS EN 12878.

### **40 CEMENTS FOR MORTARS**

- Cement: To BS EN 197-1 and CE marked.
  - Types:
    - Portland cement, CEM I.
    - Portland limestone cement, CEM II/A-LL.
    - Portland slag cement, CEM II/B-S.
    - Portland fly ash cement, CEM II/B-V.
  - Strength class: 32.5, 42.5 or 52.5.
- White cement: To BS EN 197-1 and CE marked.
  - Type: Portland cement, CEM I.
  - Strength class: 52.5.
- Sulfate resisting Portland cement:
  - Types:
    - To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
    - To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
  - Strength class: 32.5, 42.5 or 52.5.
- Masonry cement: To BS EN 413-1 and CE marked.
  - Class: MC 12.5.

### **50 ADMIXTURES FOR SITE MADE MORTARS**

- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
- Other admixtures: Submit proposals.
- Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

### **60 MAKING MORTARS GENERALLY**

- Batching: By volume. Use clean and accurate gauge boxes or buckets.
- Mix proportions: Based on dry sand. Allow for bulking of damp sand.
- Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
  - Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
- Contamination: Prevent intermixing with other materials.

### **70 MAKING HYDRAULIC LIME:SAND MORTARS**

- Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix. - Water quantity: Only sufficient to produce a workable mix.

## **Z22 SEALANTS**

### **PRODUCTS**

- 31 JOINTS (general)
  - Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

### **EXECUTION**

- 61 SUITABILITY OF JOINTS
  - Presealing checks:
    - Joint dimensions: Within limits specified for the sealant.
    - Substrate quality: Surfaces regular, undamaged and stable.
- 62 PREPARING JOINTS
  - Surfaces to which sealant must adhere:
    - Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
    - Clean using materials and methods recommended by sealant manufacturer.
  - Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
  - Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
  - Protection: Keep joints clean and protect from damage until sealant is applied.
- 63 APPLYING SEALANTS
  - Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
  - Environmental conditions: Do not dry or raise temperature of joints by heating.
  - Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
  - Sealant profiles:
    - Butt and lap joints: Slightly concave.
    - Fillet joints: Flat or slightly convex.
  - Protection: Protect finished joints from contamination or damage until sealant has cured.

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