

6141HT HTC SUPERFLOOR INDUSTRIAL POLISHED CONCRETE

1. GENERAL

If you have pre-customised this work section using the "questions and answers" provided as part of the downloading process, it may be necessary to amend some clauses to suit the final projectspecific version.

The section must still be checked and customised to suit the project being specified, by removing any other irrelevant details and adding project-specific details and selections.

This section relates to the application of Holer New Zealand Ltd HTC Superfloor® ground polished finish to new or existing concrete surfaces.

It includes:

- HTC Superfloor® Platinum
- HTC Superfloor® Gold
- HTC Superfloor® Silver
- HTC Superfloor® Bronze

Note: HTC Superfloor® industrial finishing systems recommends a solvent based penetrating stain protection.

Water based options are available instead of solvents. Contact Holer New Zealand Ltd for details.

Modify or extend the above description to suit the project being specified:

1.1 RELATED WORK

Refer to the appropriate concrete section for mix design, concrete placing, finishing and curing.

Refer to 1250 TEMPORARY WORKS & SERVICES for temporary protection of concrete surfaces.

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC D1/AS1 Access routes

AS/NZS 3661.1 Slip resistance of pedestrian surfaces - Requirements

NZS 3114 Specification for concrete surface finishes

Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.

NZBC D1/VM1 Access Routes

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Joint and Crack Filler User Guide

Repair and Patch Filler User Guide

HTC Liquid Grout User Guide

HTC Cure+ User Guide

HTC Pocket Grinding Guide

HTC Stain Protection User Guide

HTC Stain Protection Primer User Guide

HTC Twister™/HTC Superfloor®, Cleaning & Maintenance Guide

Manufacturer/supplier contact details

Company: Holer New Zealand Ltd

Web: www.superfloor.co.nz

Email: info@superfloor.co.nz

Telephone: 0800 224 653

Mobile: 021 632 157

It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.

1.4 MANUFACTURERS REQUIREMENTS - CONTRACTORS

Holer New Zealand Ltd require the work to be carried out by an HTC Superfloor® certified or approved contractor.

A list of certified and approved contractors is available from www.superfloor.co.nz.

Requirements

1.5 PROVIDE SAMPLE

Provide a sample of specified finishes before commencing work. Sample to be of similar mix to the proposed construction. Refer to SELECTIONS. Keep sample on site until concrete polishing is completed and record in HTC Superfloor® documentation.

Minimum size panel would be 1000mm x 1000mm.

Use this clause for new and old concrete floors.

1.6 TECHNIQUE DISCUSSION AND FINISH STANDARD

Before commencing work, arrange a meeting with the contract administrator to confirm the method of carrying out the work. Select an area on site, grind and finish the selected area to achieve the agreed finish. When agreement is reached, this then becomes the finish standard for the balance of the work. Protection of the work as required to be decided at this meeting.

Use this clause especially for existing older concrete floors.

Add a clause to 1250 TEMPORARY WORKS & SERVICES stating that the main contractor is to be responsible for providing temporary protection to finished concrete surfaces: i.e. "To the HTC Superfloor® ground polished concrete floor provide protective covering in accordance with HTC Superfloor® requirements".

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.8 MANUFACTURERS SPECIFICATIONS

All ground polished concrete surfaces to be completed to the system specified in SELECTIONS, to the HTC Superfloor® User guides and Material Safety Data sheets.

1.9 MAINTENANCE INSTRUCTIONS

Provide the HTC Superfloor® maintenance instructions to the owner at the completion of the work. HTC Superfloor® must be cleaned and maintained using HTC's patented cleaning system. Twister™ and water.

Performance -slip resistance for access routes

Slip resistance requirements are expressed in NZBC D1/VM1 and NZBC D1/AS1 to AS/NZS 3661.1. Although not recognised by the NZBC, when using NZBC D1/VM1 for extreme situations AS/NZS 4586 may be more suitable. NZBC D1/AS1 also requires a durability of the surface of 5 years, accelerated wear tests certificates may be required to prove long term slip resistance in critical areas. Modify the following clauses to suit.

1.10 SLIP RESISTANCE FOR ACCESS ROUTES

Slip resistance for concrete finish to comply with NZBC D1/AS1: 2.0 Level access routes and 3.0 Ramps.

- when in place on a level access route, to have a mean coefficient of friction (μ) not less than 0.4 when tested in accordance with AS/NZS 3661.1.

- when in place on a sloping access route, to have a coefficient of friction (μ) not less than $0.4 + 0.0125S$ (S = slope of surface expressed as a percentage).

Use this clause when specifying by performance. Refer to the NZBC D1/VM1 and NZBC D1/AS1.

Higher figures may be appropriate for critical areas like swimming pools etc. This clause may justify expansion, particularly where concrete floor is in public areas.

Note: Percentage slope S = vertical rise divided by horizontal distance and multiplied by 100.

Example: 1:12 gradient = $(1/12) \times 100 = 8.33\%$.

1.11 PROVIDE EVIDENCE OF SLIP RESISTANCE

Provide evidence that the concrete finish complies with the standard of performance specified.

On site sign-off of slip resistance test may be necessary.

2. PRODUCTS

Floor finishing systems

2.1 HTC SUPERFLOOR® PLATINUM

A full grind system which exposes the stones/aggregate and achieves a full gloss finish.

2.2 HTC SUPERFLOOR® GOLD

A light grind system (salt and pepper) which exposes top of stones/aggregate and achieves a full gloss finish.

2.3 HTC SUPERFLOOR® SILVER

A full grind system which exposes stones/aggregate and achieves a low gloss finish.

2.4 HTC SUPERFLOOR® BRONZE

A system which provides a mid gloss finish without exposing stones/aggregate or grinding.

Components

2.5 JOINT AND CRACK FILLER

A polymer-modified and fibre reinforced cement based product. Use for indoor skim coats, feather finish, expansion joints and crack repair. Creates a strong and durable high compression strength surface. Mix 2 parts to 1 part water, trowel application. 30-90 minutes rapid set.

2.6 REPAIR AND PATCH FILLER

A fast setting cementitious product. Use for indoor and outdoor concrete surfaces, feather finish, filling large patches and creating ramping elevations up to 75mm. Creates a strong and durable high compression strength surface. Mix 4 parts to 1 part water, trowel application. 30-90 minutes rapid set, 16 hours curing time.

2.7 HTC LIQUID GROUT

A polymerised liquid grout. Use for filling smaller pores and cracks, where normal filling is inefficient. The HTC grinding machine is used on speed 0 to push the grouting into the floor.

2.8 HTC CURE+

A modified water glass solution (densifier) for hardening and strengthening the concrete surface. Mix Cure+ 1 to 1 with water prior to application. Minimum 8 hours cure, preferably overnight..

Stain Protection - All Systems

2.9 HTC STAIN PROTECTION PRIMER

A solvent based primer with fluorated resin, used for pre-treatment prior to applying HTC stain protection, when the least colour change in surface is to be achieved. May also fill/cover small pores or hair line cracks and small scratch marks. **Water based options are available instead of solvents. Contact Holer for details.**

2.10 HTC STAIN PROTECTION

A solvent based penetrating stain protection sealer to protect the concrete surface against grease, oil, and alcohol.

Water based options are available instead of solvents. Contact Holer for details.

Tools and equipment

2.11 GRINDING AND BURNISHING

HTC diamond metal bond tools for grinding, to suit application. (refer to HTC pocket grinding guide). HTC diamond resin bond tools for polishing, to suit application. (refer to HTC pocket grinding guide).

2.12 BURNISHING PAD

HTC Twister™, a mechanical, chemical free diamond pad for HTC Superfloor®, operated on high speed burnisher after job completion or after optional stain protection application. Twister™ type to be used should be same colour code as the last resin polish code.

2.13 FINISHING MACHINE

HTC Planetary grinding and polishing machine.

3. EXECUTION

Conditions

3.1 CONFIRM CONCRETE SURFACE

Confirm concrete surface is of the required standard for the concrete polishing and finishing processes. Do not proceed if placed concrete is not capable of delivering the specified finish. Seek written direction from the contract administrator as to what action is required.

Before proceeding work confirm with the contract administrator that the concrete pavement or floor has been placed to **NZS 3114:1987**, a Class U3 trowelled (floor) finish. **This standard should be known to concrete placers. The placer should finish the surface to a medium power float standard.**

Concrete: Select the type of concrete to be used, include aggregate and/or colour.

Placing the concrete: This is a critical part of the process.

Curing: Wet cure the concrete for 7 days minimum.

Rain: Under no circumstances place the concrete when it is raining or there is rain in the forecast

Refer to the appropriate concrete section(s) used in the specification.

3.2 PROTECT GROUND SURFACES

Ensure ground concrete is covered and protected by the main contractor, from damage after the required grinding procedures. Coverings need to breathe.

Cover floor surfaces where there is a time lapse in the procedure, prior to the final polishing process to prevent damage by other sub trades.

3.3 PROTECTION

Cover glass and other surfaces to protect from damage that is caused from cementitious dust.

Application - general

3.4 SAW CUTS

Fill saw cuts in concrete slab with Joint and Crack Filler to HTC Superfloor® requirements, prior to commencing grind and polishing procedure.

Filling the cut prior to grinding prevents chipping of the edges and later shrinkage, allowing the whole floor to be ground flat.

3.5 EDGES - GRIND AND POLISHING

Ground and polish all edges to show the same aggregate as the main floor area using the same polishing resin pads as those on the floor grinding machine. Ensure that each edge step is complete before the corresponding floor grinder step to avoid an edge line pattern in the floor.

Application - HTC Superfloor® Platinum

3.6 FIRST GRIND

7 days minimum after placing of the concrete, grind the floor with a 25 grit diamond (gold shoe) or a 40 grit diamond (grey shoe). Aggregate should be consistent over the surface. Grinding should preferably take place before any internal partitions are erected, otherwise before linings or trims being installed, to enable grinder to reach into corners and close to edges and vertical surfaces.

3.7 SECOND GRIND

Grind the floor using an 80 grit diamond (brown shoe) to remove large scratches from the first grind.

3.8 APPLY JOINT & CRACK FILLER/REPAIR & PATCH FILLER/HTC LIQUID GROUT

Grout the air/pin holes left in the concrete surface. Grout construction joints and decorative cuts. Grind and remove residue liquid grout immediately once dry with #150 metal bond diamond (black shoe). Polish the floor with #150 resin bond (Black) followed by #300 grit resin bond (Blue shoe). Black and Blue Resin shoes can be mixed and used in combination; i.e. 6pc Black shoes and 6pc Blue shoes at the same time on the machine.

This system of combining Black and Blue shoes may not always be suitable in order to remove all scratches from Metal Black shoe.

3.9 APPLY HTC CURE+

Apply HTC Cure+ in accordance with HTC's User Guide instructions and leave for 8 hours.

3.10 POLISH FLOOR

After excess HTC Cure+ removal, polish the floor starting with #400 grit resin bond (Red), #800 grit resin bond (White). Finish with #3000 resin bond (Green).

Optional surface treatment: HTC Stain Protection or HTC Cleaner.

Application - HTC Superfloor® Gold

3.11 FIRST GRIND

7 days minimum after placing the concrete, polish the floor with Resin Grey #40. Polish floor with Resin Brown #60-80 grit .

3.12 APPLY JOINT AND CRACK FILLER/LIQUID GROUT

Apply Joint and Crack Filler/Liquid Grout to fill all construction joints, cracks, cuts and pin holes. Grind and remove residue liquid grout immediately once dry with #150 Resin (Black shoe), followed by #300 grit resin bond (Blue shoe). Black and Blue Resin shoes can be mixed and used in combination; i.e. 6pc Black shoes and 6pc Blue shoes at the same time on the machine.

This system of combining Black and Blue shoes may not always be suitable in order to remove all scratches from Metal Black shoe.

3.13 APPLY HTC CURE+

Apply HTC Cure+ in accordance with HTC's User Guide instructions and leave for 8 hours.

3.14 POLISH FLOOR

Remove excess HTC Cure+ and polish floor, starting with Resin Red #400 grit, then Resin White #1500 grit. Finish with Resin Green #3000 grit.

Optional surface treatment: HTC Stain Protection or HTC Cleaner.

Application - HTC Superfloor® Silver

3.15 FIRST GRIND

7 days minimum after placing the concrete, grind the floor with Metal Gold #25. Aggregate should be reasonably consistent over the surface.

3.16 SECOND GRIND

Grind the floor using Metal Brown #80.

3.17 APPLY JOINT AND CRACK FILLER/LIQUID GROUT

Grout the air/pin holes left in the concrete surface. Grout construction joints and decorative cuts. Grind and remove residue liquid grout immediately once dry with #150 metal bond diamond (black shoe).

3.18 APPLY HTC CURE+

Apply HTC Cure+ in accordance with HTC's User Guide instructions and leave for 8 hours.

3.19 POLISH FLOOR

Remove excess HTC Cure+; polish the floor with #150 grit resin bond black.

Optional surface treatment: HTC Stain Protection or HTC Cure+.

Application - HTC Superfloor® Bronze

3.20 POLISH FLOOR

7 days minimum after placing the concrete, polish the floor with Resin Black #150.

3.21 APPLY HTC CURE+

Apply HTC Cure+ in accordance with HTC's User Guide instructions. Remove excess with Resin Blue #300 Grit.

3.22 POLISH FLOOR

Polish the floor with Resin Blue #300 grit, progress to Resin White #1500, finish with Resin Green #3000.

Optional surface treatment: HTC Stain Protection or HTC Cure+.

Application - Stain Protection - All Systems

3.23 APPLY STAIN PROTECTION PRIMER AND SOLVENT SEALER

Apply HTC Stain Protection Primer and HTC Stain Protection in accordance with HTC's User Guide instructions. Apply a second coat after 6-8 hours. Burnish the next day with Twister™ Green.

Solvent based.

Completion

3.24 LEAVE

Leave work to the standard required by following the HTC Superfloor® procedures.

3.25 REMOVE

Remove debris, unused materials and elements from the site.

- 3.26 **PROTECT POLISHED CONCRETE**
It is the main contractor's responsibility to protect floor from damage. Provide protection by laying a breathable sheet material for the period between completion of the polishing and completion of the contract works.
Important: Do not use any product with adhesive backing including masking tape.
Add a clause to 1250 TEMPORARY WORKS & SERVICES stating that the main contractor is to be responsible for providing temporary protection to finished concrete surfaces: i.e. "To the HTC Superfloor® ground polished concrete floor provide protective covering in accordance with HTC Superfloor® requirements".

4. **SELECTIONS**
For further details on selections go to www.superfloor.co.nz
Substitutions are not permitted to the following, unless stated otherwise.
If substitutions are permitted modify the statement above, ensure the NO SUBSTITUTIONS clause from GENERAL is treated the same.
Select the options to suit the project and delete options not specified.

Samples

- 4.1 **SAMPLE REQUIREMENTS**
Sample: Required

- 4.2 **ON SITE STANDARD**
On site standard: Required

Concrete finishes

- 4.3 **HTC SUPERFLOOR® PLATINUM**
Location: ~

- 4.4 **HTC SUPERFLOOR® GOLD**
Location: ~

- 4.5 **HTC SUPERFLOOR® SILVER**
Location: ~

- 4.6 **HTC SUPERFLOOR® BRONZE**
Location: ~

Surface Treatment

- 4.7 **SURFACE TREATMENT**
Location: ~
Type: ~
Types: HTC Stain Protection

- 4.8 **PROTECTION**
Location: ~
Type: ~
Type: E.g. cardboard or old carpet.
Note: Do not use adhesive backing including masking tape.