

## 0325P DEFLECTA CONCRETE PROTECTION

### Branded worksection

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### Worksection abstract

This branded worksection *Template* is applicable to the use of applied DEFLECTA concrete protection products for Bacteria control, Waterproofing, Sealing and Densifying of concrete. It does not cover the physical protection of concrete by means of barriers, guards, corner protection, plates, etc.

### Background

If DEFLECTA products are also being used as a curing agent for fresh concrete, use this branded worksection *Template* in conjunction with *0310 Concrete – combined*, *0314 Concrete in situ*, *0316 Precast concrete* or *0317 Tilt-up concrete*, as required.

### Guidance text

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidance text* may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at [www.natspec.com.au](http://www.natspec.com.au).

### Optional style text

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Normal* style text where it is applicable to a project.

### Related material located elsewhere in NATSPEC

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See for example:

- *0310 Concrete – combined.*
- *0314 Concrete in situ.*
- *0411 Waterproofing – external and tanking.*
- *0621 Waterproofing – wet areas.*

### Documenting this and related work

You may document this and related work as follows:

- Show on drawings areas that require treatment using DEFLECTA products.

The *Normal* style text of this worksection *Template* may refer to items as being documented elsewhere in the contract documentation. Make sure they are documented.

### Specifying ESD

The following may be specified by retaining default text:

- Low and Zero VOC concrete protection products.
- Low and Zero VOS concrete protection products.
- Bio-degradable concrete protection products.
- Increased durability of concrete elements.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

## 1 GENERAL

DEFLECTA develops and manufactures in Melbourne, protection products for concrete. Designed specifically to kill bacteria on and within the concrete matrix is DEFLECTA ANTIMICROBIAL, Australia's only Government Certified and Registered product for bacteria control. DEFLECTA's product range also targets moisture control, hydrostatic pressure, mould, mildew and fungi, dust and slip resistance for Industry Sectors such as Health, Food Processing, Warehousing & Manufacturing, Freezer and Chillers, Car Parks, Schools and Sport Centres, Animal Husbandry, Equine, and Kennels facilities.

### 1.1 RESPONSIBILITIES

#### General

Requirement: Provide DEFLECTA concrete protection treatments, as documented.

*Documented is defined in 0171 General requirements as meaning contained in the contract documents.*

## 1.2 COMPANY CONTACTS

### DEFLECTA technical contacts

Website: [www.deflecta.com.au/contact](http://www.deflecta.com.au/contact).

## 1.3 CROSS REFERENCES

### General

Requirement: Conform to the following:

- 0171 General requirements.

*0171 General requirements contains umbrella requirements for all building and services worksections.*

*List the worksections cross referenced by this worksection. 0171 General requirements references the 018 Common requirements subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.*

*NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.*

## 1.4 MANUFACTURER'S DOCUMENTS

### Technical manuals

Website: Visit [www.deflecta.com.au/products](http://www.deflecta.com.au/products) and select the relevant product. To request technical data and safety data sheets, click on the 'Buyer Information' tab.

## 1.5 INTERPRETATION

### Abbreviations

General: For the purposes of this worksection the following abbreviations apply:

- SDS: Safety Data Sheet.
- TDS: Technical Data Sheet.

*Edit the Definitions subclause to suit the project or delete, if not required. List alphabetically.*

## 1.6 INSPECTION

### Notice

Inspection: Give notice so that inspection may be made of the following:

- Initial porosity test of concrete surface and any further porosity tests required.
- Prepared concrete surface before application of protection treatment.

*Amend to suit the project adding critical stage or mandatory inspections required by legislation or regulation.*

**Hold points**, if required, should be inserted here.

## 2 PRODUCTS

### 2.1 GENERAL

#### Product substitution

Other products: Conform to PRODUCTS, **GENERAL**, **Substitutions** in 0171 General requirements.

*The 0171 General requirements clause sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.*

#### Storage and handling

Requirement: To the DEFLECTA product TDS and SDS.

#### Marking

Identification: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.

- Date of manufacture.
- Product composition and characteristics such as volatility, flash point, toxicity and colour.

Edit the list to suit the project or delete if not required.

## 2.2 DEFLECTA BACTERIA CONTROL TREATMENTS

Delete this clause if bacteria control treatments are not being used on the project or edit following subclauses to remove any products not being used on the project.

### DEFLECTA ANTIMICROBIAL

Description: A bio-degradable clear aqueous born biocide formulation with bacterial control, for the treatment of internal or external, new or aged concrete, which produces a sanitised environment on the surface and within the concrete matrix with an internal moisture suppressant.

#### Key Benefits:

- Kills disease carrying bacteria in or on concrete including; Staphylococcus Aureus (Golden Staph) – Listeria – Escherichia Coli (E.Coli) – Salmonella.
- Active at 99.99% up to a depth of 100 mm into the concrete matrix.
- Low VOC and Zero VOS.
- Increases surface abrasion resistance and hardens concrete surface.
- Increases both compressive and flexural strength.
- Permanently seals concrete internally.

Approved by: Hazard Analysis Critical Control Point (HACCP) for use in food areas; Australian Quarantine and Inspection Service (AQIS) for use in food process/manufacturing facilities; The Australian Water Quality Centre for use in concrete potable water storage and by the Australian Pesticides and Veterinary Medicines Authority (APVMA) - Approval number: 60195/56867.

Product code: J01DA.

Application method: Sprayed.

Shelf life: 1 year, refer to product TDS for storage requirements.

Warranty: 10 years for moisture protection and 5 years for bacteria control. Refer to product TDS for warranty conditions.

### DEFLECTA BACTERIA KILL

Description: A bio-degradable clear aqueous born bacterial formulation for the treatment of concrete, which produces a sanitised environment on the surface and within the concrete matrix.

#### Key Benefits:

- Kills disease carrying bacteria in or on concrete including; Staphylococcus Aureus (Golden Staph) – Listeria – Escherichia Coli (E.Coli) – Salmonella.
- Active at 99.99% for 5 plus years.
- Low VOC and Zero VOS.
- Allows necessary vapour transmission.

Product code: J14DBK.

Application method: Sprayed.

Shelf life: 1 year, refer to product TDS for storage requirements.

Warranty: 5 years for bacteria control. Refer to product TDS for warranty conditions.

## 2.3 DEFLECTA WATERPROOFING TREATMENTS

Delete this clause if waterproofing treatments are not being used on the project or edit following subclauses to remove any products not being used on the project.

### DEFLECTA MOISTURE SUPPRESSANT

Description: A bio-degradable clear aqueous born internal treatment for protecting aged concrete.

#### Key Benefits:

- Zero VOC and Zero VOS.
- Allows necessary vapour transmission.
- Can be tinted for visual confirmation.

Product code: J03DMS.

Application method: Sprayed or as a pour/spread.

Shelf life: 2 years, refer to product TDS for storage requirements.

Warranty: 7 years for moisture protection. Refer to product TDS for warranty conditions.

### **DEFLECTA REPEL**

Description: A bio-degradable clear aqueous resin silicate hydrophobic water repellent that seals and preserves internal and external precast concrete surfaces.

#### Key Benefits:

- Can be used on surfaces other than precast concrete, including stone, brick, slate and other masonry.
- Zero VOC and Zero VOS.
- Provides hard-wearing abrasion resistant breathable barrier to surface.
- Retards efflorescence.

Product code: J04DR.

Application method: Sprayed.

Shelf life: 2 years, refer to product TDS for storage requirements.

Warranty: Refer to product TDS for warranty conditions.

### **DEFLECTA STABILIZER**

Description: A clear aqueous born internal moisture barrier/treatment for protecting internal or external, new or aged concrete.

#### Key Benefits:

- Zero VOC and Zero VOS.
- Increases surface abrasion resistance.
- Increases both compressive and flexural strength.
- Prevents internal water migration, sealing the matrix to significantly preserve imbedded steel.

Product code: J02DS.

Application method: Sprayed.

Shelf life: 2 years, refer to product TDS for storage requirements.

Warranty: 10 years for moisture protection. Refer to product TDS for warranty conditions.

## **2.4 DEFLECTA SEALER TREATMENTS**

Delete this clause if sealer treatments are not being used on the project or edit following subclauses to remove any products not being used on the project.

### **DEFLECTA HEALTH SEAL**

Description: A clear aqueous borne formulation for the protection and sealing of new or aged internal concrete surfaces beneath applied floor finishes.

#### Key Benefits:

- Zero VOC and Zero VOS.
- Long term resistance to fluid ingress.
- Pre-mixed for immediate use.

Product code: J12HS.

Application method: Sprayed, brushed or rolled.

Shelf life: 2 years, refer to product TDS for storage requirements.

Warranty: Refer to product TDS for warranty conditions.

### **DEFLECTA SURFACE BINDER**

Description: A bio-degradable clear water based semi-gloss acrylic surface sealer for new or aged internal concrete surfaces.

#### Key Benefits:

- Low VOC and Zero VOS.
- Designed to be applied over DEFLECTA ANTIMICROBIAL and DEFLECTA STABILIZER.
- Hardens surface and prevents surface dusting.
- Improves traction and adhesion.

- Endorsed by HACCP Australia for use in food processing and food handling environments.

Product code: J06SB.

Application method: Sprayed, rolled or lamb's wool applicator.

Shelf life: 2 years, refer to product TDS for storage requirements.

Warranty: Refer to product TDS for warranty conditions.

## 2.5 DEFLECTA DENSIFIER TREATMENTS

Delete this clause if densifier treatments are not being used on the project.

### DEFLECTA TOPEL

Description: A bio-degradable clear aqueous borne inorganic silicon-containing hydrophobic treatment to increase the density and hardness of internal or external, new or aged concrete surfaces.

#### Key Benefits:

- Low VOC and Low VOS.
- Increased slip resistance to surface.
- Increased abrasion resistance and durability
- Prevents surface dusting.
- Penetrates and bonds with the portland cement within the concrete.

Product code: J16DT.

Application method: Sprayed.

Shelf life: 2 years, refer to product TDS for storage requirements.

Warranty: 5 years. Refer to product TDS for warranty conditions.

## 3 EXECUTION

### 3.1 PREPARATION

#### Substrate

Cleaning: Before applying DEFLECTA products, clean the concrete surface by wet/dry commercial vacuuming and light sanding or diamond grinding, as necessary, to open the concrete surface pores and to remove all laitance, salts, paints, epoxies, builder's waste, plaster dust, vegetable waste, oils and animal fluids.

Testing: Complete surface porosity or adhesion testing, as required by the product TDS. If test results are not satisfactory, further cleaning of the surface is required.

There are further requirements for the concrete substrate regarding the quality of the concrete finish. If it is proposed to apply DEFLECTA products to new concrete, include the requirements for concrete finish below within *0310 Concrete – combined* or *0315 Concrete finishes*, as appropriate. Otherwise, inform the concrete contractor of these requirements for the concrete substrate surface:

- Flatness: +/- 5 mm in 3 m. Note: Tighter tolerances may be required for other aspects of the construction.
- Concrete pores to be left open to allow the product to penetrate the matrix. Make sure that the concrete surface is not overworked during finishing.
- Do not over burnish the concrete surface (steel trowel finish required). If surface is over burnished or there is excessive laitance then the pores shall be opened up by diamond grinding or sanding.
- Pitting or scaring of the finished concrete surface not permitted.
- It is not permitted to add any curing agents, water reducers, retarders or accelerators to the concrete mix, without prior approval from DEFLECTA.

#### Protection

Adjacent surfaces: Protect adjacent surfaces, such as glass or aluminium, from overspray or splashing during application.

Contact with adjacent glass or aluminium may cause surface to etch.

### 3.2 APPLICATION

#### General

Requirement: Conform to requirements of product TDS.

Applicators: To carry applicator's accreditation to apply DEFLECTA products.

DEFLECTA concrete protection treatments must only be applied by accredited applicators. Contact DEFLECTA for accredited applicators and supplier's details.

### **DEFLECTA ANTIMICROBIAL**

Delete this subclause if product is not being used on the project.

Timing: If applying to new concrete surfaces, apply on day of concrete placement or within 24 hours, for best results.

DEFLECTA ANTIMICROBIAL can be applied to concrete of any age.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 8°C or above 30°C.

Rain: Do not apply DEFLECTA ANTIMICROBIAL to concrete surfaces when rain is expected prior to or during the application process, as water will remove or dilute the product from the surface.

Equipment: Low to medium pressure sprayer with a fan tip, held 200 – 300 mm from concrete surface.

Application procedure:

- Pre-wet area of application with clean water and disperse any areas of standing water before application.
- Apply at a rate of 4.5 m<sup>2</sup> per litre.
- On horizontal surfaces apply first application in one direction with an overlapping spray pattern of approximately 300 mm. Allow product to penetrate surface, but not dry (usually 10 – 60 minutes), then apply second application at 90 degrees to the first application. If the surface has any slope, start at the lowest area and proceed to higher areas.
- On vertical surfaces start at the bottom and proceed up the vertical surface with overlapping horizontal strokes. Provide a minimum of two applications.
- Saturate entire surface being treated but do not allow product to pool or puddle. Disperse any standing product with a broom 15 – 30 minutes after application.

Protection: Protect treated areas from light foot traffic for a minimum of 4 hours after final application and do not subject treated areas to heavy traffic or equipment for a minimum of 24 hours after final application. For new concrete surfaces do not subject treated areas to heavy traffic and equipment for a minimum of 7 days after final application, or as instructed otherwise by the structural engineer or concrete specification.

### **DEFLECTA BACTERIA KILL**

Delete this subclause if product is not being used on the project.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 8°C or above 30°C.

Rain: Do not apply DEFLECTA BACTERIA KILL to concrete surfaces when rain is expected prior to or during the application process, as water will remove or dilute the product from the surface.

Equipment: Low to medium pressure sprayer with a fan tip, held 200 – 300 mm from concrete surface.

Application procedure:

- Pre-wet area of application with clean water and disperse any areas of standing water before application.
- Apply at a rate of 4.5 m<sup>2</sup> per litre.
- On horizontal surfaces apply first application in one direction with an overlapping spray pattern of approximately 300 mm. Allow product to penetrate surface, but not dry (usually 10 – 60 minutes), then apply second application at 90 degrees to the first application. If the surface has any slope, start at the lowest area and proceed to higher areas.
- On vertical surfaces start at the bottom and proceed up the vertical surface with overlapping horizontal strokes. Provide a minimum of two applications.
- Saturate entire surface being treated but do not allow product to pool or puddle. Disperse any standing product with a broom 15 – 30 minutes after application.

Protection: Protect treated areas from light foot traffic for a minimum of 4 hours after final application and do not subject treated areas to heavy traffic or equipment for a minimum of 24 hours after final application.

**DEFLECTA MOISTURE SUPPRESSANT**

Delete this subclause if product is not being used on the project.

Timing: Apply to concrete surfaces with a minimum age of 14 days.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 8°C or above 30°C.

Equipment: Low pressure sprayer with a fan tip or broom or roller for pour and spread application.

Application procedure:

- Apply at a rate of 4.0 m<sup>2</sup> per litre.
- Saturate entire surface being treated but do not allow product to pool or puddle. Disperse any standing product with a broom or roller 5 – 10 minutes after application.

Protection: Protect treated areas from light foot traffic for a minimum of 4 hours after final application and do not subject treated areas to heavy traffic or equipment for a minimum of 24 hours after final application.

**DEFLECTA REPEL**

Delete this subclause if product is not being used on the project.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 5°C or above 30°C.

Rain: Do not apply DEFLECTA REPEL to concrete surfaces that may be exposed to rain either during or within 24 hours of application, as water will remove or dilute the product from the surface.

Equipment: Low pressure (non-atomising) sprayer with tip held 150 – 300 mm from concrete surface.

Application procedure:

- Apply at a rate of 7-10 m<sup>2</sup> per litre.
- On horizontal surfaces, apply using an overlapping spray pattern with a fanning motion at the end of each horizontal pass. If the surface has any slope, start at the highest area and proceed to the lowest area.
- On vertical surfaces start at the top and proceed down the vertical surface with overlapping horizontal strokes.
- Sufficiently spray entire surface being treated but do not allow product to pool or puddle. Disperse any standing product with a floor polishing mop after application.

**DEFLECTA STABILIZER**

Delete this subclause if product is not being used on the project.

Timing: If applying to new concrete surfaces, apply on day of concrete placement or within 24 hours, for best results.

DEFLECTA STABILIZER can be applied to concrete of any age.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 8°C or above 30°C.

Rain: Do not apply DEFLECTA STABILIZER to concrete surfaces when rain is expected prior to or during the application process, as water will remove or dilute the product from the surface.

Equipment: Medium to high pressure airless sprayer with a fan tip, held 200 – 300 mm from concrete surface.

Application procedure:

- Pre-wet area of application with clean water and disperse any areas of standing water before application.
- Apply at a rate of 4.5 m<sup>2</sup> per litre.
- On horizontal surfaces apply first application in one direction with an overlapping spray pattern of approximately 300 mm. Allow product to penetrate surface, but not dry (usually 10 – 60 minutes), then apply second application at 90 degrees to the first application. If the surface has any slope, start at the lowest area and proceed to higher areas.
- On vertical surfaces start at the bottom and proceed up the vertical surface with overlapping horizontal strokes. Provide a minimum of two applications.
- Saturate entire surface being treated but do not allow product to pool or puddle. Disperse any standing product with a broom 15 – 30 minutes after application.

Protection: Protect treated areas from light foot traffic for a minimum of 4 hours after final application and do not subject treated areas to heavy traffic or equipment for a minimum of 24 hours after final application. For new concrete surfaces do not subject treated areas to heavy traffic and equipment for a minimum of 7 days after final application, or as instructed otherwise by the structural engineer or concrete specification.

### DEFLECTA HEALTH SEAL

Delete this subclause if product is not being used on the project.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 5°C or above 30°C.

Equipment: Sprayer, brush or roller.

Application procedure:

- Apply at a rate of 8.0m<sup>2</sup>/litre.
- Provide a minimum of two applications.
- Do not allow product to pool or puddle. Disperse any standing product with a soft brush or roller directly after application.

Protection: Protect treated areas from all traffic and do not apply any impervious coatings for a minimum of 24 hours after final application.

### DEFLECTA SURFACE BINDER

Delete this subclause if product is not being used on the project.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 10°C or above 30°C.

Equipment: 85 psi battery operated sprayer or backpack pressure sprayer with a roller, lamb's wool applicator or floor polishing mop.

Application procedure:

- Average application rate of 7.0 m<sup>2</sup>/litre. Apply initial coat at a rate of 5.0 – 10 m<sup>2</sup>/litre, dependant on surface porosity. Preceding coats may achieve up to 20 m<sup>2</sup>/litre.
- Directly after application smooth out product on concrete surface using a roller, lamb's wool applicator or floor polishing mop, to leave a smooth surface with no visible streaks.
- Provide a minimum of two coats and a maximum of four thin coats.
- Allow each coat to dry (minimum 1 hour) before applying preceding coat.

Protection: Protect treated areas from light foot traffic for a minimum of 2 hours after final application and do not subject treated areas to heavy traffic or equipment for a minimum of 24 hours after final application.

### DEFLECTA TOPEL

Delete this subclause if product is not being used on the project.

Timing: Apply to concrete surfaces with a minimum age of 72 hours.

Temperature: Do not proceed with application when air and/or substrate temperatures are, or are expected to be, below 8°C or above 30°C.

Rain: Do not apply DEFLECTA TOPEL to concrete surfaces that may be exposed to rain either during or within 24 hours of application, as water will remove or dilute the product from the surface.

Equipment: Low pressure sprayer with a soft brush or floor squeegee.

Application procedure:

- Average application rate of 7.5 m<sup>2</sup> per litre.
- If the surface has any slope, start at the lowest area and proceed to higher areas.
- Saturate entire surface being treated and maintain saturation for 20 minutes, brushing or squeegeeing out any pools or puddles.
- 30 minutes later, wet mist the surface and remove any excess material with a soft brush or squeegee to leave a uniform wet sheen.

Protection: Protect treated areas from all traffic for a minimum of 24 hours after final application.



### 3.3 COMPLETION

#### Cleaning

Overspray: Immediately treat any oversprayed adjacent surfaces by washing down with clean water and a clean cloth.

Equipment: Clean all tools and equipment with water immediately after use.

#### Warranties

Applicator checklist: Checklist provided by DEFLECTA to be completed and returned to DEFLECTA within 14 days of application to comply with warranty requirements.

## 4 SELECTIONS

**Schedules** are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

### 4.1 PRODUCT

#### DEFLECTA concrete treatment schedule

Property	A	B	C
Product name			
Product code			
Treatment area (m <sup>2</sup> )			

A, B, C: These designate each instance or type or location of the item scheduled.

Edit these codes in the **Schedule** to match those on drawings.

Product name: Select from:

- DEFLECTA ANTIMICROBIAL.
- DEFLECTA BACTERIA KILL.
- DEFLECTA MOISTURE SUPPRESSANT
- DEFLECTA REPEL.
- DEFLECTA STABILIZER.
- DEFLECTA HEALTH SEAL.
- DEFLECTA SURFACE BINDER.
- DEFLECTA TOPEL.

Product code: Enter relevant product code. See **PRODUCTS**.

Treatment area: Enter the total surface area of concrete to be treated with each product in square meters.

#### REFERENCED DOCUMENTS

The following documents are mentioned only in the **Guidance text**:

NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC TR 01	2016	Specifying ESD