INDUSTRY: DEFENCE

CONDITION: Constant forklift & hard plastic wheel trolley movement, some Impact.
TRAFFIC: HEAVY DUTY

BOQ

ITEM NO	DESCRIPTION OF THE ITEMS	UNIT
6.3	**DRDO**	
	Option-1	
6.31	**Flow applied Cementitious Polyurethane floor topping at 4.0mm thick : Nitoflor SL 3000 UT**	sqm
a.	**New concrete floors**: The base should be a minimum of Grade RC30 of BS 8500-2: 2002 and should not contain a water repellent admixture. The surface strength when assessed using a rebound hammer should be above 25 or the surface tensile strength should exceed 1.5 MPa. The laitance and any surface sealer or curing membrane should be removed by mechanical means such as shot-blasting or grinding to expose the coarse aggregate. After surface preparation, all loose debris and dirt should be removed by vacuum equipment. For concrete bases in contact with the ground, a damp-proof membrane should have been incorporated into the slab design, in accordance with the requirements of CP102 (Code Of Practice For The Protection Of Buildings Against Water From The Ground).	
b.	**Old concrete floors**: All laitance and surface contamination should be removed by mechanical means such as shot-blasting or grinding to expose the coarse aggregate. After surface preparation, all loose debris and dirt should be removed by vacuum. Heavy oil or grease deposits should be removed either mechanically, or by steam cleaning, or by biological treatment, then by high pressure water blasting followed by the application of a penetrating primer. Where oil or grease contamination has been severe or of long duration, these methods may prove unsatisfactory and in these cases removal of the affected base is necessary. In existing buildings without a functioning damp-proof membrane, the application of a surface-applied membrane should be considered. Hydrostatic pressure may, under certain circumstances, cause adhesive failure between the flooring and the substrate. Where this is likely to occur, such as in areas where the ground water table is higher than the substrate, and where external tanking has not been applied, pressure relief must be provided, e.g. by direct drainage. A close visual examination should be made to verify cleanliness and soundness. Any weak or suspect areas should be repaired.	
c.	**Scratch coating**: **Nitoflor SL3000 UT** should be applied as a scratch coat at a coverage rate of up to a nominal **1 mm thickness** actual coverage rate will depend on concrete surface texture and porosity. This scratch coat is designed to prime and seal the floor. Mix and spread evenly by trowel. The scratch coat should be allowed to cure for 12 - 48 hours at 20ºC before applying the Nitoflor SL3000 UT. If the scratch coat has been allowed to cure for >48 hours then the coat must be thoroughly abraded and a fresh layer of scratch coat applied. If severe pin-holing is evident in the cured scratch coat, indicating that air is rising from the substrate, then	

	remedial action should be taken. Contact your local Fosroc office for advice. Failure to do so may result in increased risk of pin-holing of the surface topping.	
d.	**Cementious polyurethane floor topping**: Providing mixing and applying Cementious polyurethane floor topping at a thickness of **3.0mm** using Fosroc Nitoflor SL 3000 UT a three-component product. A forced-action rotary paddle mixer is recommended for mixing the product. Topping applied at 3.0mm thickness over a scratch coat of 1mm to the designated area and shall have smooth matt finish, on cured shall exhibits the following Compressive Strength (ASTM C109) 28 days at 50.8 MPa,Tensile Strength(BS6319-7) 6.8 MPa, Flexural Strength (BS6319-3) 17.9 MPa, Slip Resistance (ASTM E303) Dry, S56/ S96 - 22/32 (moderate slip risk),Impact Resistance (ASTM D2794), Joules for 3mm thickness 8.1 and for 6mm thickness 10.8,high resistance to damage, Ensure that anchorage grooves of 2times the thickness or max 10mmx10mm are fully wetted out with material at the edges, day joints, control joints, up-stands, drains, doorways and at regular points across the floor, and all debris removed. Work shall be executed by authorised Fosroc applicator and complete as per the instructions of manufacturer.	
	Option-2	
6.32	**Epoxy resin based ESD self-smoothing floor toppings at 2.0mm thk**	sqm
6.33	**Epoxy resin based ESD self-smoothing floor toppings: Nitoflor Conductive system**	
a.	**Surface preparation**: All floors to receive Nitoflor SL Conductive topping should be protected by means of a damp-proof membrane. The absence of such membranes could lead to the problem of osmosis/rising dampness where soluble salts have concentrated. **New concrete** or cementitious substrates should have been placed at least 28 days earlier and have a moisture content of less than 5% before topping with Nitoflor SL Conductive system. This can be checked by using a Thermo Hygrometer. With non-self-supporting concrete floors transfer of moisture from the soil might occur, resulting in adhesion failures of the flooring system. The long term durability of the applied Nitoflor SL Conductive is dependent upon the adhesive bond achieved between the flooring material and substrate. It is most important therefore, that substrate surfaces are correctly prepared prior to application. All substrates should be sound and free from contamination such as mortar and paint splashes, curing Compound residue, oil or grease. Excessive laitance should be removed by light mechanical scabbling, grinding or grit blasting	
b.	**Priming:** Prepared substrates to be treated with Nitoflor SL Conductive system should be primed with **Nitoprime 25*.** Should be mixed in the proportions supplied by adding the entire contents of hardener can to the base can. Once mixed the Nitoprime 25 primer, should be immediately applied in a thin, continuous film using stiff brushes or rollers. Over application and puddles should be avoided. Porous floors may require two coats of Nitoprime 25. Nitoprime 25 should be allowed to become tack free prior to application of Nitoflor SL Conductive Undercoat.	
c.	**Epoxy Conductive Topping**: providing mixing and laying The areas indicated shall be applied with an epoxy resin based static Conductive Nitoflor SL Conductive floor topping, which shall provide an effective charge dissipation to the earth when applied over concrete or steel substrates. static Conductive areas (Resistance	

	25x10^3 to 1 x10^6 Ohms) When measured for surface resistance in accordance with ASTM F150, the static Conductive topping including Under coat shall be in the range of 25 x 10^3 - 1 x 10^6 Ohms. The surface resistance of the Conductive undercoat shall be in the range of 3 x 10^3 - 9 x 10^3 Ohms. shall have the following property CS (BS 6319) 50N/mm2, TS : 16N/mm2,FS:34N/mm2 SELF ADHESIVE COPPER TAPE of 100microns thickness and 25mm in width shall be positioned in a grid form 10.0M C/C in both directions, well connected to a Earthing point provision shall be made for every 300 sqm one Earthing point .Cost Inclusive of Supply ,apply,Equipments. Exclusive of GST as applicable,. Client shall provide Storage, Power, water, etc. Flooring work shall be executed by Fosroc Authorised Applicator	
6.34	**Epoxy resin based ESD self-smoothing floor toppings: Nitoflor Dissipative system**	
a.	**Surface preparation:** All floors to receive Nitoflor SL Dissipative topping should be protected by means of a damp-proof membrane. The absence of such membranes could lead to the problem of osmosis/rising dampness where soluble salts have concentrated. New concrete or cementitious substrates should have been placed at least 28 days earlier and have moisture content of less than 5% before topping with Nitoflor SL Dissipative system. This can be checked by using a Thermo Hygrometer. With non-self-supporting concrete floors transfer of moisture from the soil might occur, resulting in adhesion failures of the flooring system. The long term durability of the applied Nitoflor SL Dissipative is dependent upon the adhesive bond achieved between the flooring material and substrate. It is most important therefore, that substrate surfaces are correctly prepared prior to application. All substrates should be sound and free from contamination such as mortar and paint splashes, curing Compound residue, oil or grease. Excessive laitance should be removed by light mechanical groping, grinding or grit blasting	
b.	**Epoxy Dissipative Topping**: providing mixing and laying The areas indicated shall be applied with an epoxy resin based static Dissipative Nitoflor SL Dissipative floor topping, which shall provide an effective charge dissipation to the earth when applied over concrete or steel substrates. Static Dissipative areas (Resistance 10^6 to 10^9 Ohms) The surface resistance of the Dissipative undercoat shall be in the range of 3 x 10^4 - 8 x 10^4 Ohms. When measured for surface resistance in accordance with ASTM F150, the static Dissipative topping including undercoat shall be in the range of 1 x 10^6 - 1 x 10^9 Ohms. shall have the following property CS (BS 6319) 50N/mm2, TS : 16N/mm2,FS:34N/mm2 SELF ADHESIVE COPPER TAPE of 100microns thickness and 25mm in width shall be positioned in a grid form 10.0M C/C in both directions, well connected to a Earthing point provision shall be made for every 300 sqm one Earthing point .Cost Inclusive of Supply ,apply,Equipments. Exclusive of GST as applicable,. Client shall provide Storage, Power, water, etc. Flooring work shall be executed by Fosroc Authorised Applicator..	
6.33	**Epoxy Coving- Nitoflor TF5000 : Size 75mm x 75mm**	rmt
a.	**Surface Preparation:** Removing all laitance and any surface sealer or curing membrane by mechanical means such as shot-blasting, grinding or light scabbling to the level of sound concrete After surface preparation, all loose debris and dirt should be removed by vacuum equipment.	
b.	**Priming:** Priming is not normally required provided the substrate is sound,	

	untreated, dry and good quality concrete. If any doubts exist of the quality of the concrete, contact the local Fosroc office for advice. For highly absorbent concrete substrate, **Nitoprime 25** shall be used to seal the pores.	
c.	**Epoxy Coving**: All the right angle junction on the floor and walls has to be provided with coving using **Nitoflor TF5000** a three part solvent-free combination of epoxy resin, modified amine hardeners filled with specially graded and selected high crushing strength, chemically inert aggregates with properties Compressive strength BS 6319-Pt 2 - 70 N/mm2, after application of prime coat with **Nitoprime 25** over the prepared surface. Followed by **Nitocote VF** epoxy putty for a smooth finish on the cover, to receive the finish coats using **Nitoflor FC 150**, a solvent free high build epoxy of the approved shade shall be applied with roller brush or paint brush. Work shall be executed by Authorised applicator with supply & application and completed as per the manufacturer's Specification.	
6.34	**Expansion joints**	rmt
a.	**Surface preparation**: Clean the surface and remove any dust, unsound or contaminated material, plaster, oil, paint, grease, corrosion deposits or algae, Oil and grease deposits should be removed by mechanical means.	
b.	**Priming**: Prime sealing slot surfaces with Primer No. 20 using a clean dry brush. Colpor 200 must be applied between 30 minutes and 2 hours after priming.	
c.	**PU Sealant**: Providing mixing and laying PU Sealant at the designated joints are to be sealed using Fosroc **Colpor 200PF** over the Backer rod of **Expancel** which shall position on the **filler board of Hydrocel XL of the Expansion joint** , pavement sealant manufactured by Fosroc to BS 5212: 1990 and U.S.Federal Specification SS-S 200E:1984.. Colpor 200PF has a **movement accommodation factor of 30% in butt joints**.. To ensure the sealant operates within its stated **movement capacity of 30%,** the width of sealing slots should be designed in accordance with the recommendations of IRC-57-2006. In trafficked **areas the expansion joint width should not generally Exceed 30 mm.** **Joint depth**: In trafficked areas the sealing slots should be constructed so that at no time during the anticipated operating cycle of the joint will the sealant protrude above the surface of the concrete pavement. It is necessary to recess the level of the sealant 5 to 8 mm below the pavement surface, dependent on the time of year and temperature prevailing at the time of sealing. **Note**: The width to depth ratio of the Colpor 200PF seal should be 1:1 to 1½:1 subject to a minimum 10 mm depth of sealant (example, contraction joint: 15 mm wide x 13 mm depth; expansion joint: 25 mm wide x 20 mm depth). Complete as per the manufacturer Instruction. Cost Inclusive of Supply, apply, Equipment's. Exclusive of GST as applicable. Client shall provide Storage, Power, water, etc. Flooring work shall be executed by Fosroc Authorised Applicator.	