



AN ISO 9001 & 14001 COMPANY

TENDER DOCUMENT

NIT No. SRO/CON/ETS/263 dated 14.11.2024.

FOR

Tender for Retrofitting and Re-habilitation works for “Construction of 1116 tenements consisting of 7 blocks with Bus bar room adopting T.D. 7/2008 (G+7 Framed structures) including internal water supply, sanitary and electrifications plus development works at Perumbakkam, Phase – II Scheme, Block No.12 in Kancheepuram District, Chennai under JNNURM - Reach- II”.

VOLUME – III

Price schedule

TENDER INVITING AUTHORITY

**Engineering Projects (India) Limited
(A GOVT. OF INDIA ENTERPRISE)
Southern Regional Office, Chennai,
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ENGINEERING PROJECTS (INDIA) LTD
Southern Regional office, Chennai

Name of work : Tender for Retrofitting and Re-habilitation works for "Construction of 1116 tenements consisting of 7 blocks with Bus bar room adopting T.D. 7/2008 (G+7 Framed structures) including internal water supply, sanitary and electrifications plus development works at Perumbakkam, Phase – II Scheme, Block No.12 in Kancheepuram District, Chennai under JNNURM - Reach- II".

NIT: EPI/SRO/ETS/263 dtd 14.11.2024

BOQ for Block-12

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
1	1. Bill of Quantities (BOQ) for Repairing One Column of 3 m Height (GF, FF and SF)				
	1 Hacking and Removal of Laitance on the Concrete Surfaces of the Four Vertical Faces of the Column				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or any other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of hacking and removal of laitance is 75 mm.	5.40	SQM	585.00	3,159.00
	2 Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per the site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the four faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	2.50	Kg	1,530.00	3,825.00
	3 Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/ equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	30.00	RMT	162.00	4,860.00
	4 Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/ equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 40 mm.	0.22	CUM	67,500.00	14,850.00
	Total Cost / Column				26,694.00
	No. of columns in GF, FF and SF =7x3=234				62,46,396.00
Sub Total for Columns	Total for Repair of Columns				62,46,396.00
2	2. Bill of Quantities (BOQ) for Repairing One Beam of 12.5 m Length in the GF				
	1 Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	3.00	SQM	585.00	1,755.00
	2 Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	12	SQM	585.00	7,020.00
	3 Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/ equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	12	Kg	1,530.00	18,360.00
	4 Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/ equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/ equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	35	RMT	162.00	5,670.00

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
5	Polymer Modified Micro-Concrete			-	
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/Equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.5	CUM	67,500.00	33,750.00
	Total per Beam				66,555.00
	No of Beams in GF- 6 Nos				3,99,330.00
3	3. Bill of Quantities (BOQ) for Repairing One Beam of 29.65 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	6.50	SQM	585.00	3,803.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	28	SQM	585.00	16,380.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/Equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	28	Kg	1,530.00	42,840.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/Equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/Equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	83	RMT	162.00	13,446.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/Equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	1.02	CUM	67,500.00	68,850.00
	Total per Beam				1,45,319.00
	No of Beams in GF- 1 No				1,45,319.00
4	4. Bill of Quantities (BOQ) for Repairing One Beam of 27.04 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	5.60	SQM	585.00	3,276.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	24.50	SQM	585.00	14,333.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/Equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	24.50	Kg	1,530.00	37,485.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	73.00	Rmt	162.00	11,826.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.90	CUM	67,500.00	60,750.00
	Total per Beam				1,27,670.00
	No of Beams in GF- 2 No				2,55,340.00
5	5. Bill of Quantities (BOQ) for Repairing One Beam of 1.34 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	0.30	SQM	585.00	176.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm	1.34	SQM	585.00	784.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	1.34	Kg	1,530.00	2,050.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge	4.00	Rmt	162.00	648.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.05	CUM	67,500.00	3,375.00
	Total per Cost/Beam				7,033.00
	No of Beams in GF- 12 Nos				84,396.00
6	6. Bill of Quantities (BOQ) for Repairing One Beam of 4.65 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	1.10	SQM	585.00	644.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	4.70	SQM	585.00	2,750.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	4.70	Kg	1,530.00	7,191.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	14.00	RMT	162.00	2,268.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.20	CUM	67,500.00	13,500.00
	Total Cost /Beam				26,353.00
	No of Beams in GF- 1 Nos				26,353.00
7	7. Bill of Quantities (BOQ) for Repairing One Beam of 2.05 m Length in the GF of TNSCB Block 12 Building at Perumbakkam				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	0.50	SQM	585.00	293.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	2.10	SQM	585.00	1,229.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	2.10	Kg	1,530.00	3,213.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	6.20	RMT	162.00	1,004.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.08	CUM	67,500.00	5,400.00
	Total Cost /Beam				11,139.00
	No of Beams in GF- 2 Nos				22,278.00
8	8. Bill of Quantities (BOQ) for Repairing One Beam of 4.77 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	0.85	SQM	585.00	497.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	3.60	SQM	585.00	2,106.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	3.60	Kg	1,530.00	5,508.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	11.00	RMT	162.00	1,782.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.14	CUM	67,500.00	9,450.00
	Total Cost /Beam				19,343.00
	No of Beams in GF- 8 Nos				1,54,744.00
9	9. Bill of Quantities (BOQ) for Repairing One Beam of 6.26 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	1.03	SQM	585.00	603.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	5.00	SQM	585.00	2,925.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	5.00	Kg	1,530.00	7,650.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	14.00	RMT	162.00	2,268.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.17	CUM	67,500.00	11,475.00
	Total Cost /Beam				24,921.00
	No of Beams in GF- 6 Nos				1,49,526.00
10	10. Bill of Quantities (BOQ) for Repairing One Beam of 16.93 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	3.20	SQM	585.00	1,872.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	14.00	SQM	585.00	8,190.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/ equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	14.00	Kg	1,530.00	21,420.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/ equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/ equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	42.00	RMT	162.00	6,804.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/ equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.52	CUM	67,500.00	35,100.00
	Total Cost /Beam				73,386.00
	No of Beams in GF- 4 Nos				2,93,544.00
11	11. Bill of Quantities (BOQ) for Repairing One Beam of 2.13 m Length in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of the Beam				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed. The maximum thickness of loose concrete is 30 mm.	0.50	SQM	585.00	293.00
2	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	2.20	SQM	585.00	1,287.00
3	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/ equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	2.20	Kg	1,530.00	3,366.00
4	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/ equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/ equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	6.50	RMT	162.00	1,053.00
5	Polymer Modified Micro-Concrete				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/Equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The side shuttering can be removed after 3 days and the bottom shuttering after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 30 mm.	0.08	CUM	67,500.00	5,400.00
	Total Cost /Beam				11,399.00
	No of Beams in GF- 2 Nos				22,798.00
12	12. Bill of Quantities (BOQ) for Repairing One Beam of 12.5 m Length in the FF and SF				
1	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/Equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	3.00	Kg	1,530.00	4,590.00
	Total Cost /Beam				4,590.00
	No of Beams in FF+SF- 6 + 6 = 12 Nos				55,080.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
13	13. Bill of Quantities (BOQ) for Repairing One Beam of 29.65 m Length in the FF and SF				
1	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/Equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	7.00	Kg	1,530.00	10,710.00
	Total Cost /Beam				10,710.00
	No of Beams in FF+SF- 1+1 = 2 Nos				21,420.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
14	14. Bill of Quantities (BOQ) for Repairing One Beam of 27.04 m Length in the FF and SF				
1	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/Equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	6.10	Kg	1,530.00	9,333.00
	Total Cost /Beam				9,333.00
	No of Beams in FF+SF- 2 + 2 = 4 Nos				37,332.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
15	15. Bill of Quantities (BOQ) for Repairing One Beam of 1.34 m Length in the FF and SF				
1	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/Equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	0.40	Kg	1,530.00	612.00
	Total Cost /Beam				612.00
	No of Beams in FF+SF- 12 + 12 = 24 Nos				14,688.00
16	16. Bill of Quantities (BOQ) for Repairing One Beam of 4.65 m Length in the FF and SF				
1	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/Equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	1.20	Kg	1,530.00	1,836.00
	Total Cost /Beam				1,836.00
	No of Beams in FF+SF- 1 + 1 = 2 Nos				3,672.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
17	17. Bill of Quantities (BOQ) for Repairing One Beam of 2.05 m Length in the FF and SF				
1	Low Viscous Epoxy Injection Grouting as per the Site Condition				

Sl. No.	Item Description	Qty.	Unit	Rate	Amount
				(excluding Gst) (Rs)	(excluding Gst) (Rs)
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	0.52	Kg	1,530.00	796.00
	Total Cost /Beam				796.00
	No of Beams in FF+SF- 2 + 2 = 4 Nos				3,184.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
18	18. Bill of Quantities (BOQ) for Repairing One Beam of 4.77 m Length in the FF and SF				
	1 Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	0.90	Kg	1,530.00	1,377.00
	Total Cost /Beam				1,377.00
	No of Beams in FF+SF- 8 + 8 = 16 Nos				22,032.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
19	19. Bill of Quantities (BOQ) for Repairing One Beam of 6.26 m Length in the FF and SF				
	1 Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	1.20	Kg	1,530.00	1,836.00
	Total Cost /Beam				1,836.00
	No of Beams in FF+SF- 6 + 6 = 12 Nos				22,032.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
20	20. Bill of Quantities (BOQ) for Repairing One Beam of 16.93 m Length in the FF and SF				
	1 Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	3.50	Kg	1,530.00	5,355.00
	Total Cost /Beam				5,355.00
	No of Beams in FF+SF- 4 + 4 = 8 Nos				42,840.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
21	21. Bill of Quantities (BOQ) for Repairing One Beam of 2.13 m Length in the FF and SF				
	1 Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	0.54	Kg	1,530.00	826.00
	Total Cost /Beam				826.00
	No of Beams in FF+SF- 2 + 2 = 4 Nos				3,304.00
	Note: Only 25% of the quantity of low viscous epoxy is considered for the grouting.				
	Sub Total for BEAMS				17,79,212.00
22	22. Bill of Quantities (BOQ) for Repairing One Plinth Beam of 12.5 m Length				
	1 Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	6.00	SQM	585.00	3,510.00
	2 Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	12.00	Kg	1,530.00	18,360.00
	3 Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				

Sl. No.	Item Description	Qty.	Unit	Rate	Amount
				(excluding Gst) (Rs)	(excluding Gst) (Rs)
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	23.20	RMT	162.00	3,758.00
4	Polymer Modified Mortar (As per the Site Condition)				
	Providing and laying two layers (max. 25 mm in each layer) of polymer modified single component, alkaline resistant fibre reinforced, dual shrinkage-compensated, thixotropic, cementitious patch repair mortar Asian Paints Smartcare Repair Mortar/equivalent material that achieves compressive strength of 35 MPa at 7 days and finishing with trowel carefully compacting the same around the rebars and finishing to bring it in line with existing concrete surface on the beams and slabs etc., where the thickness of application is less than 50mm in patches as the per specifications inclusive of a bond coat. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge.	6.00	SQM	2,520.00	15,120.00
	Total Cost /Beam				40,748.00
	No of Plinth Beams- 4 Nos				1,62,992.00
23	23. Bill of Quantities (BOQ) for Repairing One Plinth Beam of 4.65 m Length				
1	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	2.40	SQM	585.00	1,404.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/ equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	5.00	Kg	1,530.00	7,650.00
3	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/ equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/ equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	9.30	RMT	162.00	1,507.00
4	Polymer Modified Mortar (As per the Site Condition)				
	Providing and laying two layers (max. 25 mm in each layer) of polymer modified single component, alkaline resistant fibre reinforced, dual shrinkage-compensated, thixotropic, cementitious patch repair mortar Asian Paints Smartcare Repair Mortar/ equivalent material that achieves compressive strength of 35 MPa at 7 days and finishing with trowel carefully compacting the same around the rebars and finishing to bring it in line with existing concrete surface on the beams and slabs etc., where the thickness of application is less than 50mm in patches as the per specifications inclusive of a bond coat. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge.	2.40	SQM	2,520.00	6,048.00
	Total Cost /Beam				16,609.00
	No of Plinth Beams- 2 Nos				33,218.00
24	24. Bill of Quantities (BOQ) for Repairing One Plinth Beam of 3.17 m Length				
1	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	1.60	SQM	585.00	936.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/ equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	3.20	Kg	1,530.00	4,896.00
3	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				

Sl. No.	Item Description	Qty.	Unit	Rate	Amount
				(excluding Gst) (Rs)	(excluding Gst) (Rs)
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	6.40	RMT	162.00	1,037.00
4	Polymer Modified Mortar (As per the Site Condition)				
	Providing and laying two layers (max. 25 mm in each layer) of polymer modified single component, alkaline resistant fibre reinforced, dual shrinkage-compensated, thixotropic, cementitious patch repair mortar Asian Paints Smartcare Repair Mortar/equivalent material that achieves compressive strength of 35 MPa at 7 days and finishing with trowel carefully compacting the same around the rebars and finishing to bring it in line with existing concrete surface on the beams and slabs etc., where the thickness of application is less than 50mm in patches as the per specifications inclusive of a bond coat. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge.	1.60	SQM	2,520.00	4,032.00
	Total Cost /Beam				10,901.00
	No of Plinth Beams- 4 Nos				43,604.00
25	25. Bill of Quantities (BOQ) for Repairing One Plinth Beam of 1.31 m Length				
1	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	0.70	SQM	585.00	410.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	1.31	Kg	1,530.00	2,004.00
3	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	2.62	RMT	162.00	424.00
4	Polymer Modified Mortar (As per the Site Condition)				
	Providing and laying two layers (max. 25 mm in each layer) of polymer modified single component, alkaline resistant fibre reinforced, dual shrinkage-compensated, thixotropic, cementitious patch repair mortar Asian Paints Smartcare Repair Mortar/equivalent material that achieves compressive strength of 35 MPa at 7 days and finishing with trowel carefully compacting the same around the rebars and finishing to bring it in line with existing concrete surface on the beams and slabs etc., where the thickness of application is less than 50mm in patches as the per specifications inclusive of a bond coat. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge.	0.70	SQM	2,520.00	1,764.00
	Total Cost /Beam				4,602.00
	No of Plinth Beams- 4 Nos				18,408.00
26	26. Bill of Quantities (BOQ) for Repairing One Plinth Beam of 6.26 m Length				
1	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	2.30	SQM	585.00	1,346.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	4.50	Kg	1,530.00	6,885.00
3	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				

Sl. No.	Item Description	Qty.	Unit	Rate	Amount
				(excluding Gst) (Rs)	(excluding Gst) (Rs)
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	9.00	RMT	162.00	1,458.00
4	Polymer Modified Mortar (As per the Site Condition)				
	Providing and laying two layers (max. 25 mm in each layer) of polymer modified single component, alkaline resistant fibre reinforced, dual shrinkage-compensated, thixotropic, cementitious patch repair mortar Asian Paints Smartcare Repair Mortar/equivalent material that achieves compressive strength of 35 MPa at 7 days and finishing with trowel carefully compacting the same around the rebars and finishing to bring it in line with existing concrete surface on the beams and slabs etc., where the thickness of application is less than 50mm in patches as the per specifications inclusive of a bond coat. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge.	2.30	SQM	2,520.00	5,796.00
	Total Cost /Beam				15,485.00
	No of Plinth Beams- 2 Nos				30,970.00
27	27. Bill of Quantities (BOQ) for Repairing One Plinth Beam of 5.34 m Length				
1	Hacking and Removal of Laitance on the Concrete Surfaces of the Two Vertical Faces of the Beam				
	Hacking and removal of laitance on the existing surfaces of concrete using mechanical pneumatic hammer or other suitable devices as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding/ temporary supports/working platform, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	2.10	SQM	585.00	1,229.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	4.20	Kg	1,530.00	6,426.00
3	Anti-corrosive Coating on the Corroded Existing Longitudinal Reinforcement Bars				
	Removal of heavy corrosion products on the steel reinforcement bars by using Asian Paints Smartcare APCOREP RUSTRUM/equivalent material and mechanically using wire brush and water jet cleaning etc., and thereafter providing and applying in one full continuous anticorrosive coating using Asian Paints Smartcare APCOREP RUSTCOAT RB/equivalent material on the cleaned old steel reinforcement bars (upto 32 mm diameter), without leaving any gap in the coating and ensuring to cover the rear side of the bars. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	8.30	RMT	162.00	1,345.00
4	Polymer Modified Mortar (As per the Site Condition)				
	Providing and laying two layers (max. 25 mm in each layer) of polymer modified single component, alkaline resistant fibre reinforced, dual shrinkage-compensated, thixotropic, cementitious patch repair mortar Asian Paints Smartcare Repair Mortar/equivalent material that achieves compressive strength of 35 MPa at 7 days and finishing with trowel carefully compacting the same around the rebars and finishing to bring it in line with existing concrete surface on the beams and slabs etc., where the thickness of application is less than 50mm in patches as the per specifications inclusive of a bond coat. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge.	2.10	SQM	2,520.00	5,292.00
	Total Cost /Beam				14,292.00
	No of Plinth Beams- 4 Nos				57,168.00
	Sub-Total for Repair of Plinth Beams				3,46,360.00
28	28. Bill of Quantities (BOQ) for Repairing a Roof Slab 11.20 m x 7.10 m in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of Roof Slabs				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	67.00	SQM	585.00	39,195.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	67.00	Kg	1,530.00	1,02,510.00
3	New Steel Reinforcement Bars				
	Cutting and removing the existing corroded reinforcement bars in which the dia. is reduced more than 20 % of the original dia. and providing and fixing 10 mm dia. TMT reinforcement bars at a spacing of 150 mm c/c both ways at the bottom of the slab using binding wires or tack welding etc., as per the site condition. Item rate is inclusive of the materials, charges for labour, supervision, tools, tackles, scaffolding, welding electrodes and binding wire etc., complete as per specifications and directed by the Engineer In-Charge.	590.00	Kg	144.00	84,960.00
4	Shear Keys				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	Providing and fixing shear keys using 10 mm diameter TMT bars after drilling holes of 12 mm diameter and 100 mm depth at a spacing of 1 No./m ² on the concrete substrate, cleaning and grouting the holes with two component epoxy resin based anchoring grout from SIKA/equivalent material. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	68.00	Per No	160.20	10,894.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The bottom shuttering can be removed after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 50 mm.	3.50	CUM	67,500.00	2,36,250.00
	Total Cost / Slab				4,73,809.00
	No of Slab in GF- 4 Nos				18,95,236.00
29	29. Bill of Quantities (BOQ) for Repairing a Roof Slab 1.31 m x 4.14 m in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of Roof Slabs				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	6.00	SQM	585.00	3,510.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	6.00	Kg	1,530.00	9,180.00
3	New Steel Reinforcement Bars				
	Cutting and removing the existing corroded reinforcement bars in which the dia. is reduced more than 20 % of the original dia. and providing and fixing 10 mm dia. TMT reinforcement bars at a spacing of 150 mm c/c both ways at the bottom of the slab using binding wires or tack welding etc., as per the site condition. Item rate is inclusive of the materials, charges for labour, supervision, tools, tackles, scaffolding, welding electrodes and binding wire etc., complete as per specifications and directed by the Engineer In-Charge.	50.00	Kg	144.00	7,200.00
4	Shear Keys				
	Providing and fixing shear keys using 10 mm diameter TMT bars after drilling holes of 12 mm diameter and 100 mm depth at a spacing of 1 No./m ² on the concrete substrate, cleaning and grouting the holes with two component epoxy resin based anchoring grout from SIKA/equivalent material. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	7.00	Per No	160.20	1,121.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The bottom shuttering can be removed after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 50 mm.	0.30	CUM	67,500.00	20,250.00
	Total Cost / Slab				41,261.00
	No of Slab in GF- 4 Nos				1,65,044.00
30	30. Bill of Quantities (BOQ) for Repairing a Roof Slab 27.04 m x 2.13 m in the GF				
1	Breaking of Loose Concrete on the Bottom Surface of Roof Slabs				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	52.00	SQM	585.00	30,420.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	52.00	Kg	1,530.00	79,560.00
3	New Steel Reinforcement Bars				
	Cutting and removing the existing corroded reinforcement bars in which the dia. is reduced more than 20 % of the original dia. and providing and fixing 10 mm dia. TMT reinforcement bars at a spacing of 150 mm c/c both ways at the bottom of the slab using binding wires or tack welding etc., as per the site condition. Item rate is inclusive of the materials, charges for labour, supervision, tools, tackles, scaffolding, welding electrodes and binding wire etc., complete as per specifications and directed by the Engineer In-Charge.	460.00	Kg	144.00	66,240.00
4	Shear Keys				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	Providing and fixing shear keys using 10 mm diameter TMT bars after drilling holes of 12 mm diameter and 100 mm depth at a spacing of 1 No./m ² on the concrete substrate, cleaning and grouting the holes with two component epoxy resin based anchoring grout from SIKA/equivalent material. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	53.00	Per No	160.20	8,491.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The bottom shuttering can be removed after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 50 mm.	2.70	CUM	67,500.00	1,82,250.00
	Total Cost / Slab				3,66,961.00
	No of Slab in GF- 1 Nos				3,66,961.00
31	31. Bill of Quantities (BOQ) for Repairing a Roof Slab 11.20 m x 7.10 m in the FF and SF				
1	Breaking of Loose Concrete on the Bottom Surface of Roof Slabs				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	67.00	SQM	585.00	39,195.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	67.00	Kg	1,530.00	1,02,510.00
3	Additional Steel Reinforcement Bars				
	Cutting and removing the existing corroded reinforcement bars in which the dia. is reduced more than 20 % of the original dia. and providing and fixing 10 mm dia. TMT reinforcement bars at a spacing of 150 mm c/c both ways at the bottom of the slab using binding wires or tack welding etc., as per the site condition. Item rate is inclusive of the materials, charges for labour, supervision, tools, tackles, scaffolding, welding electrodes and binding wire etc., complete as per specifications and directed by the Engineer In-Charge.	375.00	Kg	144.00	54,000.00
4	Shear Keys				
	Providing and fixing shear keys using 10 mm diameter TMT bars after drilling holes of 12 mm diameter and 100 mm depth at a spacing of 1 No./m ² on the concrete substrate, cleaning and grouting the holes with two component epoxy resin based anchoring grout from SIKA/equivalent material. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	68.00	Per No	160.20	10,894.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The bottom shuttering can be removed after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 50 mm.	3.50	CUM	67,500.00	2,36,250.00
	Total Cost / Slab				4,42,849.00
	No of Slab in FF+SF- 4+4=8 Nos				35,42,792.00
32	32. Bill of Quantities (BOQ) for Repairing a Roof Slab 1.31 m x 4.14 m in the FF and SF				
1	Breaking of Loose Concrete on the Bottom Surface of Roof Slabs				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	6.00	SQM	585.00	3,510.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	6.00	Kg	1,530.00	9,180.00
3	Additional Steel Reinforcement Bars				
	Cutting and removing the existing corroded reinforcement bars in which the dia. is reduced more than 20 % of the original dia. and providing and fixing 10 mm dia. TMT reinforcement bars at a spacing of 150 mm c/c both ways at the bottom of the slab using binding wires or tack welding etc., as per the site condition. Item rate is inclusive of the materials, charges for labour, supervision, tools, tackles, scaffolding, welding electrodes and binding wire etc., complete as per specifications and directed by the Engineer In-Charge.	35.00	Kg	144.00	5,040.00
4	Shear Keys				

Sl. No.	Item Description	Qty.	Unit	Rate	Amount
				(excluding Gst) (Rs)	(excluding Gst) (Rs)
	Providing and fixing shear keys using 10 mm diameter TMT bars after drilling holes of 12 mm diameter and 100 mm depth at a spacing of 1 No./m ² on the concrete substrate, cleaning and grouting the holes with two component epoxy resin based anchoring grout from SIKA/equivalent material. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	7.00	Per No	160.20	1,121.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The bottom shuttering can be removed after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 50 mm.	0.30	CUM	67,500.00	20,250.00
	Total Cost / Slab				39,101.00
	No of Slab in FF+SF- 4+4= 8 Nos				3,12,808.00
33	33. Bill of Quantities (BOQ) for a Repairing Roof Slab 27.04 m x 2.13 m in the FF and SF				
1	Breaking of Loose Concrete on the Bottom Surface of Roof Slabs				
	Dismantling, removing and chipping mechanically all loose disintegrated and damaged concrete up to the integrated (good) concrete as per the direction of Engineer-in-charge. Item rate is inclusive of charges for labour, supervision, tools, tackles, scaffolding, safety of equipments and shifting of concrete debris to the designated place as per EPI etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of loose concrete is 30 mm.	52.00	SQM	585.00	30,420.00
2	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	52.00	Kg	1,530.00	79,560.00
3	Additional Steel Reinforcement Bars				
	Cutting and removing the existing corroded reinforcement bars in which the dia. is reduced more than 20 % of the original dia. and providing and fixing 10 mm dia. TMT reinforcement bars at a spacing of 150 mm c/c both ways at the bottom of the slab using binding wires or tack welding etc., as per the site condition. Item rate is inclusive of the materials, charges for labour, supervision, tools, tackles, scaffolding, welding electrodes and binding wire etc., complete as per specifications and directed by the Engineer In-Charge.	295.00	Kg	144.00	42,480.00
4	Shear Keys				
	Providing and fixing shear keys using 10 mm diameter TMT bars after drilling holes of 12 mm diameter and 100 mm depth at a spacing of 1 No./m ² on the concrete substrate, cleaning and grouting the holes with two component epoxy resin based anchoring grout from SIKA/equivalent material. Item rate is inclusive of the materials, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	53.00	Per No	160.20	8,491.00
5	Polymer Modified Micro-Concrete				
	Providing and laying of polymer modified micro-concrete like Asian Paints Smartcare Microconcrete HS/equivalent material blended with washed, saturated surface-dry (SSD), graded, low absorption, high density aggregates of size 5mm to 10mm at 25% by weight of micro-concrete and water at 4 litres per 25 kg bag and pouring into the form work using suitable pumping device for uniform flow of concrete. The bottom shuttering can be removed after 7 days ensuring proper bond between the micro concrete and existing concrete substrate. Item rate inclusive of all materials, labours, supervision, tools, tackles, transportation, fixing thin film coated water tight shuttering, curing, scaffolding/ temporary supports/working platform etc., complete as per specifications and directed by the Engineer In-Charge. The maximum thickness of microconcrete is 50 mm.	2.70	CUM	67,500.00	1,82,250.00
	Total Cost / Slab				3,43,201.00
	No of Slab in FF+SF- 1+1= 2 Nos				6,86,402.00
34	34. Bill of Quantities (BOQ) for Repairing Roof Slabs 11.20 m x 7.1 m, 1.31 m x 5.34 m and 27.04 m x 2.13 m in the TF				
1	Low Viscous Epoxy Injection Grouting as per the Site Condition				
	Providing and applying injection grouting using low viscous Asian Paints Smartcare APCOREP INJECT GROUT/equivalent material as per site condition. Item rate is inclusive of materials, drilling and fixing 6 mm dia. nozzles of length 75 mm into a 150 mm deep hole at a spacing of 1000 mm c/c in a staggered manner on the two vertical faces using epoxy putty and grouting by suitable grouting pump under pressure till the refusal, cutting of nozzles after the grouting and finishing with fast setting mortar, all labour, supervision, tools and tackles, scaffolding/ temporary supports/working platform and transportation etc., complete as per specifications and directed by the Engineer In-Charge.	344.00	Kg	1,530.00	5,26,320.00
	Total Cost / Slab				5,26,320.00
	No of Slab in Floors- 1Nos				5,26,320.00
Sub Total for Slabs	Total for Repair of Slabs				74,95,563.00
	Total for Repair of Columns , Plinth Beams , Beams & Slabs				1,58,67,531.00
IIT Charges Fixed- No need to change					
A	The Inspection, Technical Guidance and Expert Opinion are to be provided by IIT Madras during the activities of specialized repair and rehabilitation works of Block No. 12 - TNSCB Building at Perumbakkam consist of (i) sequence of providing temporary supports to the columns, beams and slabs, (ii) sequence of removing the cover concrete/loose concrete on the columns, beams and slabs and repositioning the temporary supports as per the site conditions, (iii) sequence of removal of loose concrete around the corroded bars in the columns, beams and slabs, (iv) removal of rust from corroded steel rebars and applying anti-corrosive coating, (v) drilling of holes up to the				

Sl. No.	Item Description	Qty.	Unit	Rate (excluding Gst)	Amount (excluding Gst)
				(Rs)	(Rs)
	required depth and inserting shear keys as per the requirement, (vi) sequence of inserting nozzles and injecting low viscous resin, (vii) sequence and providing additional steel reinforcements and proper anchoring of steel reinforcements, (viii) water tight shuttering around the columns, beams and slabs, (ix) sequence of repairing the columns, beams and slabs using polymer modified mortar/microconcrete as per the site conditions, (x) curing and sequence of removal of shuttering on the columns, beams and slabs, (xi) preparation of BOQ for deviation of works as per the extent of corrosion level in steel reinforcements in the columns, beams and slabs and as per the site conditions, (xii) sequence of application of protective coating, (xiii) checking the quality of all repair materials including microconcrete/polymer modified mortar and low viscous resin as per the BOQ and quantity of repair materials utilized and (xiv) issuance of stability certificate				
	Technical Service Charge				
B	1. Expert in Repair and Rehabilitation (Professor - IIT Madras)				
	Expected no. of visits/month = 2				
	No. of days/visit = 1				
	Duration = 5 months				
	Total no. of man-day visits = 2 x 1 x 5 = 10				
	Charge per man-day visit for a Professor, IIT Madras as per IIT Madras = Rs. 50,000/-				
	Local transport per site visit = Rs. 2,500/-				
	Total charge = (50000+2500) x 10 = Rs. 5,25,000/-	10	days	52,500.00	5,25,000.00
C	2. Senior Engineer Specialized in Repair and Rehabilitation				
	(ME/M.Tech., in Structural Engg. with 8 years of experience)				
	Expected no. of visits/month = 2				
	No. of days/visit = 1				
	Duration = 5 months				
	Total no. of man-day visits = 2 x 1 x 5 = 10				
	Charge per man-day for a Senior Executive, IIT Madras = Rs. 25,000/-				
	Local transport per visit = Rs. 2,500/-				
	Total charge = (25000+2500) x 10 = Rs. 2,75,000/-	10	days	27,500.00	2,75,000.00
D	3. Site Engineer Specialized in Repair and Rehabilitation				
	(BE/B.Tech., in Structural Engg. with 3 years of experience)				
	Duration = 5 months				
	Charge/month = Rs. 75,000/-				
	Transport allowance/month = Rs. 10,000/-				
	Total charge = (75000+10000) x 5 = Rs. 4,25,000/-	5	days	85,000.00	4,25,000.00
E	Total technical service charge (525000+275000+425000) = Rs. 12,25,000/-				12,25,000.00
F	IIT Madras ICSR overheads (15% of 12,25,000) = Rs. 1,83,750/-				1,83,750.00
G	Total amount inclusive of ICSR, IIT overheads = Rs. 14,08,750/-				14,08,750.00
	Total Excluding GST				1,72,76,281.00