Condur ® Anchor

HIGH STRENGTH, HIGH MODULUS, MOISTURE INSENSITIVE ANCHORING ADHESIVE

DESCRIPTION

A 2-part 100% solids moisture insensitive heavy duty epoxy adhesive prepackaged in 2 component cartridges for ease of application. **Condur Anchor** conforms to ASTM C881 standard specifications for Type IV Grade 3, Class B,C & BS EN 1504-6; anchoring of reinforced steel bars.

USES & ADVANTAGES

Uses include :-

- Setting starter bars, dowels, holding down bolts and anchoring in general where a permanent high strength application is required.
- Suitable for anchoring close to concrete edges, where vibration or anchor abrasion may be a problem.
- Suitable for use in damp environments with a variety of anchor rods including threaded rod and rods of different composition including galvanized, stainless steel, brass and zinc plated.
- Curtain wall & stone dry hanging brackets reinforcement.
- Building structure reinforcement & framework anchoring.
- Fixing of various equipment.
- Fixing of bolts & rebars for highway, bridges, water conservancy projects rebuilding.
- Fixing of advertisement boards, noise barriers & barricades.

Advantages include the following:-

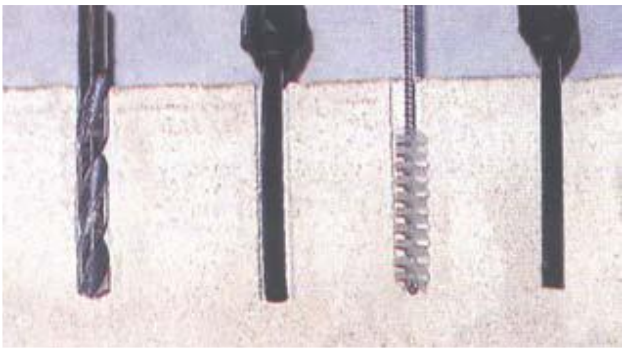
- Easy gunnability.
- Shrinkage free hardening.
- High strength & modulus.
- Can be used on moist concrete, moisture tolerant, long term load stability in a damp environment.
- Non-sag ideal for vertical application & overhead.
- Provides corrosion protection to bolts or reinforced bars.
- Solvent free.
- No styrene content.
- Low odor.
- Tough and durable.
- Ageing, heat resistance.
- Can be used in solid concrete, cavity walls or light weight concrete, and natural stone when used in conjunction with sleeves, anchor rods, starter bars, etc.
- Chemically bonded to concrete.
- No expansion force in base concrete suitable to use in narrow spacing and edge distance application.
- Easy, fast & economical to use.
- Unaffected by wide range of acids, alkalis and industrial chemicals.
- 2 Pack colour coding gives visual check on correct mixing.
- No site mixing inconsistencies.
- Seismic resistance, no expansion.

PROPERTIES

Colour :	**Part A**	white
	Part B	pink
	Mixed Adhesive	pink
Form :	Gunable	
Mixed Density :	1.50 ± 0.1	kg/ltr
Compressive Strength:	1 day	≥ 70 MPa
ASTM C579	7 days	≥ 90 MPa

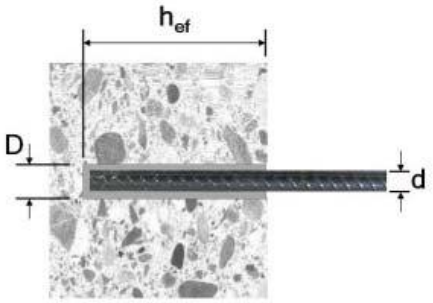
Mix Ratio:	A : B = 3 : 1
Flexural Strength: ASTM C580	≥ 35 MPa
Working Time: ASTM C881	approx. 15-30 mins
Tensile Strength: ASTM D638	7 Days ≥20 N/mm^2
Water Absorption: ASTM D570	< 0.15%
Application Temperature:	+5 to 40^0 C
Service Temperature:	-20 to 80^0 C
Fire Resistance :	Class E
Dangerous substances :	Confirms to 5.3
Pull off displacement : EN 1881	< 0.6 mm (75 kN) load.

Note : Data quoted is typical @25ºC for this product and does not constitute a specification. To obtain performance characteristics stated in this data sheet the mixing ratio must be maintained.



1) Drill hole to diameter and length specified
2) Blow dust out from the hole commencing from the bottom by using an air blower connected to a pipe.
3) Clean the hole out with a nylon brush.
4) Blow dust out from the hole once again commencing from the bottom by using an air blower connected to a pipe.

LOADING CAPACITY WITH REBAR FIXING



- Anchor characteristic tensile load is the minimum of characteristic tensile values between concrete [Ncb], bond [Na], and steel [Ns].
- Concrete: C20/25, Compressive Strength [f'c] = 20 N/mm^2 Cylinder
- Steel Grade: SD40, Yield Strength [fy] = 400 N/mm^2

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Characteristic Load Table

Rebar Size [d], mm	Drill Bit [D], mm	Characteristic Steel Resistance (kN)	Characteristic Resistance in Tension Loading, kN N_k = Min {N_s, N_{cb}, N_a}															Depth to Exceed Steel Limits, mm
10	13	30.8	25.1	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	98
12	16	44.4		37.7	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	118
16	20	78.9			60.3	70.4	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	157
20	25	123.3					100.5	113.1	123.3	123.3	123.3	123.3	123.3	123.3	123.3	123.3	123.3	196
25	30	192.6							157.1	176.7	192.6	192.6	192.6	192.6	192.6	192.6	192.6	245
28	35	241.6								197.9	219.9	241.6	241.6	241.6	241.6	241.6	241.6	275
32	40	315.6									251.3	281.5	301.6	315.6	315.6	315.6	315.6	314
Embedment depth [h_{ef}], mm			80	100	120	140	160	180	200	225	250	280	300	320	350	400	450	

Recommended Load Table

Rebar Size [d], mm	Drill Bit [D], mm	Recommended Steel Resistance (kN)	Recommended Tensile Load, kN N_{rec} = Min {$Ø_sN_s$, $Ø_{cb}N_{cb}$, $Ø_aN_a$} * (1/γ)															Depth to Exceed Steel Limits, mm
10	13	15.6	9.3	11.7	14.0	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	134
12	16	22.5		14.0	16.8	19.6	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	161
16	20	40.0			22.4	26.2	29.9	33.6	37.4	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	214
20	25	62.5					37.4	42.0	46.7	52.5	58.4	62.5	62.5	62.5	62.5	62.5	62.5	268
25	30	97.6							58.4	65.7	73.0	81.7	87.6	93.4	97.6	97.6	97.6	334
28	35	122.4								73.6	81.7	91.5	98.1	104.6	114.4	122.4	122.4	375
32	40	159.9									93.4	104.6	112.1	119.6	130.8	149.4	159.9	428
Embedment depth [h_{ef}], mm			80	100	120	140	160	180	200	225	250	280	300	320	350	400	450	

Partial Safety Factor

Steel [γ_s] = 1.15 Bond Pullout [γ_p] = 1.8 Concrete Breakout [γ_{cb}] = 1.5 Safety factor for action load [γ] = 1.4

1) All load values are based on performance of individual anchor without influence of spacing and, edge distance.
2) Please consult Cormix Technical Service Department for different calculation from above.

CONSUMPTION RATES

Rebar Size [d], mm	Drill Bit [D], mm	Appoximated Consumption per hole (ml)														
10	13	6	8	9	11	12	14	15	17	19	21	23	24	27	30	34
12	16		12	15	17	20	22	25	28	31	34	37	39	43	49	55
16	20			19	22	25	29	32	36	40	44	48	51	55	63	71
20	25					40	45	50	56	62	69	74	79	87	99	111
25	30							61	68	76	85	91	97	106	121	136
28	35								109	121	136	146	155	170	194	218
32	40									158	177	190	203	222	253	285
Hole depth [hef], mm		80	100	120	140	160	180	200	225	250	280	300	320	350	400	450

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LOADING CAPACITY FOR THREADED STUD FIXING

- Concrete: C20/25, Compressive Strength [f_c] = 20 N/mm^2 - Cylinder
- Steel Grade: 5.8, Yield Strength [f_y] = 400 N/mm$_2$

Characteristic resistance

Anchor size	M8	M10	M12	M16	M20	M24	M27	M30
Tensile [N_k], kN	17.1	27.2	39.6	62.8	106.8	158.3	203.6	263.9
Shear [V_k], kN	9.9	15.8	23.0	43.4	67.9	97.7	128.8	156.5

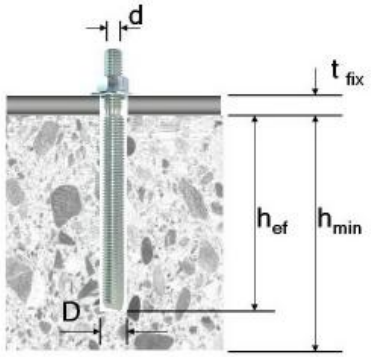
Design Resistance

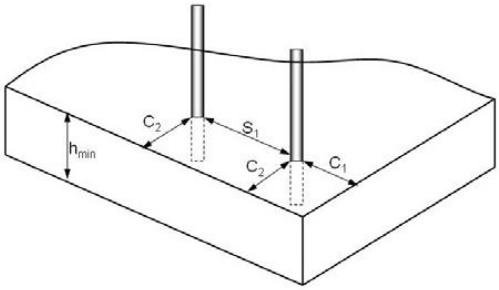
Anchor size	M8	M10	M12	M16	M20	M24	M27	M30
Tensile [N_d], kN	11.1	15.6	22.8	34.6	58.7	87.1	112.0	145.1
Shear [V_d], kN	6.4	10.3	14.9	28.2	44.1	63.5	83.7	101.7

Recommended Load

Anchor size	M8	M10	M12	M16	M20	M24	M27	M30
Tensile [N_d], kN	7.5	10.5	15.4	23.3	39.7	58.8	75.7	98.1
Shear [V_d], kN	4.3	6.9	10.1	19.1	29.8	42.9	56.6	68.7

SETTING DETAILS WITH THREADED STUD





Fixing Details

Anchor size	M8	M10	M12	M16	M20	M24	M27	M30
Hole Diameter [D], mm	10	12	14	18	24	28	30	35
Embedment Depth [h_{ef}], mm	80	90	110	125	170	210	240	280
Minimunm Concrete Thickness [h_{min}], mm	110	120	150	180	230	280	320	370
Maximum Fixture Thickness [t_{fix}], mm	15	20	30	40	50	55	60	70
Minimum Edge Distance [C_{min}], mm	40	45	55	63	85	105	120	140
Minimum Spacing [S_{min}], mm	40	45	55	63	85	105	120	140
Tightening Torque [T_{inst}], Nm	15	30	50	100	160	240	270	300
Approx. Volume per Hole, ml	3	4	6	9	33	48	61	100
No. of Fixing per Cartridge	108	81	54	36	10	7	5	3

- Embedment depths are only suggested based on standard anchor studs, deeper embedment depth can be adopted to suit the application and the length of anchor used.

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MIXING

Attach mixing nozzle with included mixing thread inside, dispense small amount of **Condur Anchor** mixed material aside until uniform pink colour is observed.

IMPORTANT NOTE

Attach static mixer nozzle to cartridge. Dispense a small amount to one side until the extruded material is a uniform pink colour. Then proceed with installation.

ANCHORING & FIXING

1) Insert the static mixing nozzle to the bottom of the hole.
   Fill the hole with material to approximately half the depth whilst withdrawing the static mixing nozzle slowly.
2) Insert the threaded rod or dowel all the way to the bottom of the hole. Twist the bolt to ensure it engages with the material. The bolt should not be tightened until the minimum bolt up cure time has been achieved.

CURING

Full curing time of the material is based on the ambient temperature or the surrounding temperature. As a guideline full cure at 30ºC is 24 hrs.

CLEANING

Clean tools & equipment immediately with Cormix cleaner. Hardened material can only be removed mechanically.

HEALTH & SAFETY

Prolonged and repeated skin contact with epoxy resins and curing agents may cause dermatitis in persons sensitive to these products. Gloves, barrier creams, protective clothing and eye protection should be worn when handling these products. If poisoning occurs, contact a doctor or Poisons.
Information Centre. If swallowed, do NOT induce vomiting-give a glass of water. If in eyes, hold eyes open, flood with water for at least 15 minutes. If skin contact occurs remove contaminated clothing and wash skin thoroughly.

ANCHORING ACCESSORIES

Condur Anchor
Caulking Gun

Condur Anchor in 390 ml Hard Shell Cartridge and static mixer

- Material Retaining Plugs are excellent for use in overhead and horizontal anchoring and dowelling. The retaining plugs keep the material and anchor in place while the material cures.
- Nylon brushes are ideal for cleaning drilled holes in concrete or masonry. Wire brushes should not be used as they may smooth and polish the holes interior and create additional dust.

PACKAGING

Condur Anchor is available in 390 ml. dual component cartridges.

STORAGE & SHELF LIFE

Condur Anchor has a shelf life of 12 months when stored in a dry place between 20 - 30ºC in unopened containers.

TECHNICAL SERVICE

The Cormix International Technical Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

QUALITY ASSURANCE

ISO 9001 : 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

DISCLAIMER

Performance data is achieved testing in accordance with International Standards. Testing by others may result in different results from those published as a result of external factors such as poor sampling, incorrect mixing, varying temperatures, curing, crushing procedures etc.
Cormix does not take responsibility nor need to defend others testing that does not achieve the published data.
The user must test the products suitability for the intended application and purpose. Cormix reserves the right to change the properties of the product.
Site conditions and differences in materials are such that no warranty or fitness for a particular purpose, nor liability can be inferred from the published data sheet, written recommendations or from other advise offered.

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