

FCI-A Insert PAT.P

Launching the series of post-construction insert (M12-M24)

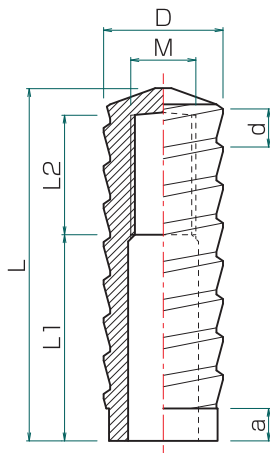
The raw material of FCI-A insert is Alumina ceramic, which is half the weight of metal, next hardest material after diamond, is tolerant to acid and alkali. By featuring those strength, this is the product of "Post-construction insert of no corrosion, no salt damage" We have create the series for M12 to M24.

- In order to keep the drilling diameter of insert small, we apply the integral molding.
- Screw shaped form can help to bind the insert to concrete.
- Rotation of the insert can help the flow of adhesive.
- Screw part is subject to the JIS B1021C grade.
- It would not create contact corrosion that happened with arrangement of bar.

■ Application

- Scaffold for temporary construction of PC bridge.
- For mounting cradle to utility corridor.
- Insert that require rustproof, insulation etc.

■ Figure of standard specification



■ Standard specification

Name(FCI)	Nominal size	L	L 1	L 2	D	a	d	drilling meter (φ)	drilling length (mm)	resin quantity (cc)	under the bolt neck length t=thickness
M12A×65	M12	65	38	22	22	6	7	25	70	14	57.8+t
M16A×75	M16	75	45	24	27	8	8	30	80	24	68.0+t
M20A×100	M20	100	63	31	32	11	9.5	35	105	34	90.5+t
M24A×130	M24	130	85	38	38	15	11	40	135	53	118.0+t

■ Acceptable strength (Calculation at longterm loading*)

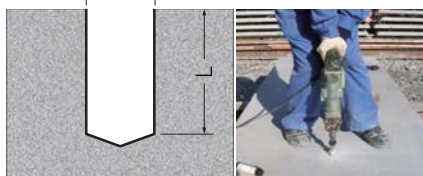
Name(FCI)	Nominal size	Pull out strength of FCI		Allowable proof stress of bolt (SS400)		Tensile strength of concrete (Fc)			Shear strength of concrete (Fc)			Remarks
		P1 #2	P2 #2	Pull	Shear	24	30	60	24	30	60	
M12A×65	M12	53.9	26.8	13.5	9.4	7.4	8.3	11.7	13.4	15.0	21.2	
M16A×75	M16	100.4	36.7	25.1	17.6	10.1	11.3	16.0	17.9	20.0	28.2	
M20A×100	M20	156.8	61.7	39.2	27.4	17.0	19.0	26.9	31.8	35.5	50.2	
M24A×130	M24	225.9	98.0	56.5	39.5	27.8	31.0	43.9	53.7	60.0	84.9	Production on order

*1 Calculation is based on "Design recommendations for Composite Constructions" from Architectural Institute of Japan.
 *2 Figure of failure, P1:Deside by yield of installed bolt, P2: Deside by the strength of adhesive.

■ Mounting Methods of the FCI-A insert

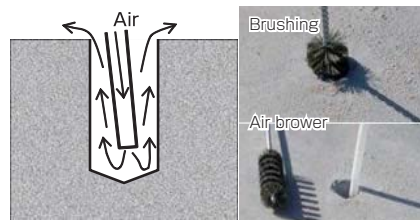
(1) Making a hole

- Please refer to the hole diameter and diphth shown at figure 1.
- Mark on concrete surface for the hole.
- Drill to the concrete surface by verticle angle, by using hammer drill. Make sure not to make scratch on surface.



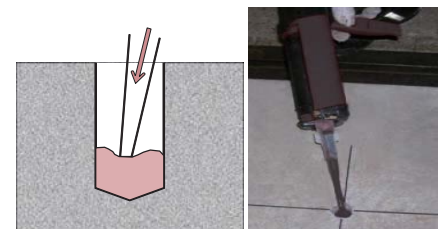
(2) Cleaning the hole

- Brush and brower inside the hole and remove the chips.
- Insert the FCI into the hole and confirm that it fits whole length in the hole.
- Wipe inside of hole by using cloth.



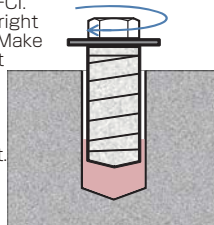
(3) Resing injection

- Inject HILTI-RE500 by injection gun.
- Injection quantity per size will be shown at figure 1.



(4) Insert FCI

- Using a washer larger than the hole diameter, and screw a bolt into FCI.
- Rotate the FCI to the right inside of resin slowly. Make sure the resin pour out around of FCI during the inserting.
- Warning: If you screw too fast, it may be unable to release air out.



(5) Complete the installation

- Screw the FCI until a washer touches a concrete concrete surface, and confirm the resin pour out from the washer.



- Wipe out the resin pour out from the washer. Completed.

■ Table - 1

Size	hole diameter (φ)	Depth (L)	resin quantity (cc)
M12A×65	25	70	10.0
M16A×75	30	80	14.0
M20A×100	35	105	30.0
M24A×130	41	135	50.0