



INDO CONSTRUCTION FASTENING SYSTEMS

A brand of Indo Spark Group Since 1978



# Anchor fasteners

Indo Prime Bolt Zone  
(IPBZ DP)



# Indo Construction Fastening Systems

Indo Construction Fastening Systems (ICFS) is a 45 years company, having expertise and operations in the following three verticals:

- ICFS Anchor Fastening Systems
- Construction Services
- ICFS Anchor Designer

We have chemical and mechanical anchors usable for installing furniture, fixtures & structures at site. Based on the design load parameters, we even suggest correct type of chemical, diameter of anchor bolts, embedment depth and chemical consumption per hole.



## Our story

*«From an automotive workshop employing just 2 in 1978 to what we are today-a well-known, successful, respectable, leading business house in India.*

*It was indeed a long journey. A journey full of challenges, hardships, bottlenecks. But we came out intact and grew many folds - vertical and horizontal.*

*The best assets of ours, I think are our reputation for honesty, fair dealing, timely delivery and quality.*

*As I look back there are two main factors which made Indo Spark blossom. First is the wisdom and honesty of our chairperson Mr. Tilakchand Ingale along with his trust in the employees and second is the wholehearted, sincere, hard work put up by our employees – young and old including technicians and workmen.*

*One thing is certain*

*We have never stopped growing.*

**Sandeep Ingale, CEO Indo Spark Group**

# Indo Prime Bolt Zone (IPBZ DP)

## Zinc Flake Through bolt

**Through bolt anchor with corrosion-resistant coating for cracked and non-cracked concrete**



### Features & benefits

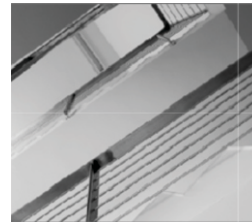
- New generation of through bolt with unique corrosion-resistant coating
- High performance in cracked and Non-cracked concrete confirmed by ETA Option1
- Highest quality ensures maximum load capability
- For applications requiring fire resistance up to 120 minutes
- Suitable for reduced embedment to avoid contact with reinforcement
- Embedment depth markings help to ensure precise installation of the anchor
- Design of IPBZ DP allows drilling and installing directly through the fixture and help storeduce installation time
- Anchors can be used in earthquake risk zones-seismic category C1and C2
- Fire resistant

### Applications

- Cladding restraints
- Consoles
- Barriers
- Structural steel
- Curtain walling
- Handrails
- Heavy Plant
- Balustrading
- Passenger lifts
- Facades
- Racking systems
- Platforms
- Fencing and gates manufacturing and installation

### Base Materials Approved for use in

- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Reinforced concrete
- Unreinforced concrete



**Also suitable for use in Natural Stone (after site testing)**

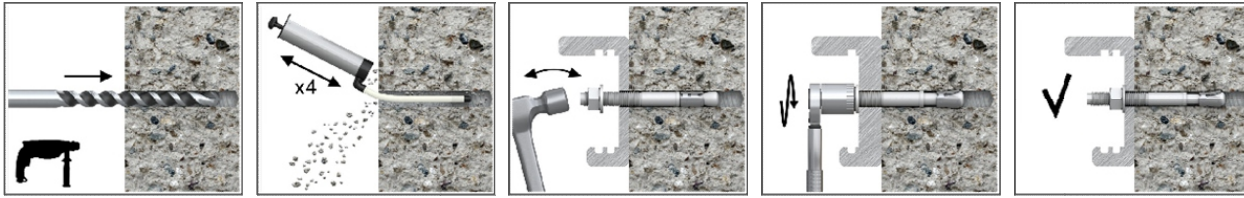


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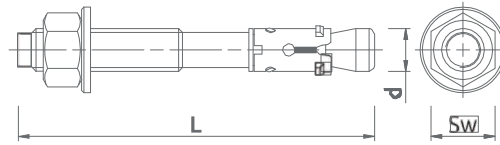


# Indo Prime Bolt Zone (IPBZ DP)

## Product installation guide



- Drill a hole of required diameter and depth
- Clear the hole of drilling dust and debris (using blow pump or equivalent method)
- Lightly tap the through bolt through the fixture into hole with a hammer until fixing depth is reached
- Tighten to the recommended torque

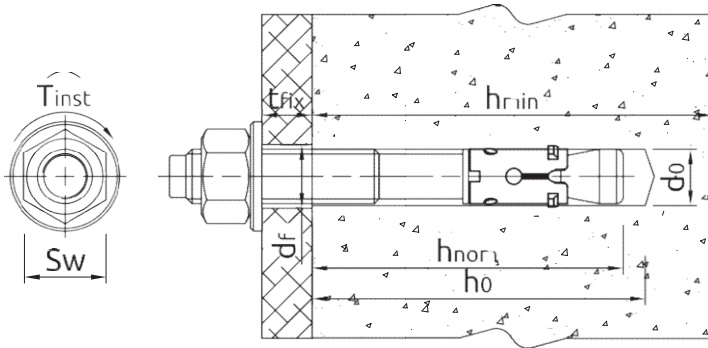


## Product Information

Size	Product code	Anchor		Fixture		
		Diameter d (mm)	Length L (mm)	Max. thickness $t_{fix}$ for :		Hole diameter $d_f$ (mm)
				$h_{nom, red}$	$h_{nom, std}$	
M8	IPBZ DPZF-08065/15	8	65	15	-	9
M8	IPBZ DPZF-08080/15	8	80	30	15	9
M8	IPBZ DPZF-08100/35	8	100	50	35	9
M8	IPBZ DPZF-08115/50	8	115	65	50	9
M10	IPBZ DPZF-10065/5	10	65	5	-	11
M10	IPBZ DPZF-10080/20	10	80	20	-	11
M10	IPBZ DPZF-10095/15	10	95	35	15	11
M10	IPBZ DPZF-10115/35	10	115	55	35	11
M10	IPBZ DPZF-10130/50	10	130	70	50	11
M12	IPBZ DPZF-12080/5	12	80	5	-	13
M12	IPBZ DPZF-12100/5	12	100	25	5	13
M12	IPBZ DPZF-12120/25	12	120	45	25	13
M12	IPBZ DPZF-12135/40	12	135	60	40	13
M12	IPBZ DPZF-12150/55	12	150	75	55	13
M16	IPBZ DPZF-16105/10	16	105	10	-	18
M16	IPBZ DPZF-16125/5	16	125	25	5	18
M16	IPBZ DPZF-16140/20	16	140	40	20	18
M16	IPBZ DPZF-16180/60	16	180	80	60	18
M16	IPBZ DPZF-16220/100	16	220	120	100	18
M20	IPBZ DPZF-20125/5	20	125	5	-	22
M20	IPBZ DPZF-20160/20	20	160	40	20	22
M20	IPBZ DPZF-20200/60	20	200	80	60	22

# Indo Prime Bolt Zone (IPBZ DP)

## Installation Data



Size		M8	M10	M12	M16	M20
Thread diameter	d (mm)	8	10	12	16	20
Hole diameter in substrate	d <sub>0</sub> (mm)	8	10	12	16	20
Installation torque	T <sub>inst</sub> (Nm)	10	20	40	100	180
Wrench size	Sw (mm)	13	17	19	24	30
External diameter of washer	(mm)	16	20	24	30	37

Size		M8	M10	M12	M16	M20
<b>Standard Embedment Depth</b>						
Min.hole depth in substrate	h <sub>0,s</sub> (mm)	65	79	90	110	129
Min.installation depth	h <sub>nom,s</sub> (mm)	55	69	80	100	119
Min.substrate thickness	h <sub>min,s</sub> (Nm)	100	120	140	170	200
Min.spacing (Non-cracked concrete)	s <sub>min,s</sub> (mm)	50	70	90	160	180
Min.spacing (Cracked concrete)	s <sub>min,s</sub> (mm)	50	70	90	160	180
Min.edge distance (Non-cracked concrete)	c <sub>min,s</sub> (mm)	40	50	65	85	100
Min.edge distance (Cracked concrete)	c <sub>min,s</sub> (mm)	40	45	65	90	100

Size		M8	M10	M12	M16	M20
<b>Reduced Embedment Depth</b>						
Min.hole depth in substrate	h <sub>0,r</sub> (mm)	50	59	70	90	110
Min.installation depth	h <sub>nom,r</sub> (mm)	40	49	60	80	100
Min.substrate thickness	h <sub>min,r</sub> (Nm)	100	100	100	130	160
Min.spacing (Non-cracked concrete)	s <sub>min,r</sub> (mm)	55	75	150	190	300
Min.spacing (Cracked concrete)	s <sub>min,r</sub> (mm)	55	75	150	190	300
Min.edge distance (Non-cracked concrete)	c <sub>min,r</sub> (mm)	45	60	70	100	160
Min.edge distance (Cracked concrete)	c <sub>min,r</sub> (mm)	40	50	80	110	120

## Mechanical Properties

Size			M8	M10	M12	M16	M20
Nominal ultimate tensile strength - tension	$f_{uk}$	[N/mm <sup>2</sup> ]	620	620	620	620	620
Nominal ultimate tensile strength - shear	$f_{uk}$	[N/mm <sup>2</sup> ]	520	520	520	520	520
Nominal yield strength - tension	$f_{yk}$	[N/mm <sup>2</sup> ]	531	531	531	531	531
Nominal yield strength - shear	$f_{yk}$	[N/mm <sup>2</sup> ]	416	416	416	416	416
Cross sectional area - tension	$A_s$	[mm <sup>2</sup> ]	25.5	40.7	60.1	106.6	162.9
Cross sectional area - shear	$A_s$	[mm <sup>2</sup> ]	38.9	61.7	89.6	165.2	259.1
Elastic section modulus	$W_e$	[mm <sup>2</sup> ]	34.3	68.3	119.6	299.5	588.3
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	19	38	67	167	328
Design bending resistance	M	[Nm]	15	31	53	134	263

## Basic Performance Data

Performance data for single anchor without influence of edge distance and spacing

Size	M8	M10	M12	M16	M20
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### Non-Cracked Concrete

Standard embedment depth $h_{ef}$	(mm)	47.00	59.00	68.00	85.00	99.00
Reduced embedment depth $h_{ef}$	(mm)	32.00	39.00	48.00	65.00	80.00

### Cracked Concrete

Standard embedment depth $h_{ef}$	(mm)	47.00	59.00	68.00	85.00	99.00
Reduced embedment depth $h_{ef}$	(mm)	32.00	39.00	48.00	65.00	80.00

### Mean Unlimate Load

Size	M8	M10	M12	M16	M20
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### Non-Cracked Concrete

#### Tension Load $N_{Ru,m}$

Standard embedment depth	(kN)	12.40	20.60	27.70	45.50	64.80
Reduced embedment depth	(kN)	9.60	13.60	17.60	34.50	47.10

### Cracked Concrete

Standard embedment depth	(kN)	7.50	12.50	19.90	27.30	41.90
Reduced embedment depth	(kN)	4.80	8.60	12.80	26.80	32.70

#### Shear Load $V_{Ru,m}$

Size	M8	M10	M12	M16	M20
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### Non-Cracked Concrete

Standard embedment depth	(kN)	12.20	19.20	28.00	51.50	80.90
Reduced embedment depth	(kN)	10.10	16.44	22.45	51.50	80.90

## Basic Performance Data

### Cracked Concrete

Standard embedment depth	(kN)	12.20	19.20	28.00	51.50	80.90
Reduced embedment depth	(kN)	8.60	11.57	15.80	49.78	66.66

### Characteristic Load

Size	M8	M10	M12	M16	M20
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### Non-Cracked Concrete

#### Tension Load $N_{Rk}$

Standard embedment depth	(kN)	9.00	12.00	20.00	35.00	48.46
Reduced embedment depth	(kN)	7.50	9.00	12.00	25.78	35.20

### Cracked Concrete

Standard embedment depth	(kN)	5.00	9.00	12.00	20.00	30.00
Reduced embedment depth	(kN)	3.00	6.00	9.00	16.00	24.64

#### Shear Load $V_{Rk}$

Size	M8	M10	M12	M16	M20
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### Non-Cracked Concrete

Standard embedment depth	(kN)	9.10	15.70	23.70	47.10	60.60
Reduced embedment depth	(kN)	8.90	11.98	16.36	47.10	60.60

### Cracked Concrete

Standard embedment depth	(kN)	9.10	15.61	23.70	47.10	60.60
Reduced embedment depth	(kN)	6.23	8.39	11.45	36.09	49.28

### Design Load

Size	M8	M10	M12	M16	M20
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### Non-Cracked Concrete

#### Tension Load $N_{Rd}$

Standard embedment depth	(kN)	5.00	8.00	13.33	23.33	32.30
Reduced embedment depth	(kN)	4.17	5.00	8.00	17.19	23.47

### Cracked Concrete

Standard embedment depth	(kN)	2.78	6.00	8.00	13.33	20.00
Reduced embedment depth	(kN)	1.67	3.33	6.00	1.67	16.43

#### Shear Load $V_{Rd}$

Size	M8	M10	M12	M16	M20
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### Non-Cracked Concrete

Standard embedment depth	(kN)	7.28	12.56	18.96	37.68	48.48
Reduced embedment depth	(kN)	5.94	7.99	10.91	34.37	46.93

### Cracked Concrete

Standard embedment depth	(kN)	7.28	10.40	18.96	35.98	45.23
Reduced embedment depth	(kN)	4.16	5.59	7.63	24.06	32.85





## Design Performance Data

### Steel Failure

### Shear Load

Size			M8		M10		M12		M16		M20	
Characteristic resistance without lever arm	$V_{rk,s}$	(kN)	9.10	9.10	15.70	15.70	23.70	23.70	47.10	47.10	60.60	60.60
Ductility factor	$k_7$	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance without lever arm	$M_{rk,s}$	(Nm)	22.00	22.00	45.00	45.00	79.00	79.00	200.0	200.0	389.0	389.0
Partial safety factor	$\gamma_{Ms}$	-	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25

### Concrete Pry-Out Failure

Size			M8		M10		M12		M16		M20	
Factor	$k$	-	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00
Installation safety factor	$\gamma_{inst}$	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

### Concrete Edge Failure

Size			M8		M10		M12		M16		M20	
Effective length of anchor	$l_f$	(mm)	32.00	47.00	39.00	59.00	48.00	68.00	65.00	85.00	80.00	99.00
Anchor diameter	$d_{no}$	(mm)	8.00	8.00	10.00	10.00	12.00	12.00	16.00	16.00	20.00	20.00
Installation safety factor	$\gamma_{inst}$	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

The use of the reduced embedment depth M8 & M10 is restricted to anchoring statically indeterminate structural components

## Design Performance Data

Resistance to tension and shear loads under fire exposure - Reduced embedment depth

Size			M8		M10		M12		M16		M20	
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### R(for EI) = 30 min

Effective embedment depth	$h_{ef}$	(mm)	32.00	47.00	39.00	59.00	48.00	68.00	65.00	85.00	80.00	99.00
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### Steel Failure

### Tension Load

Characteristic resistance	$N_{Rk,s}$	(kN)	0.40	0.40	0.90	0.90	1.70	1.70	3.10	3.10	4.90	4.90
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### Pull-Out Test Failure

Characteristic resistance	$N_{Rk,s}$	(kN)	0.80	1.30	1.50	2.30	2.30	3.00	4.00	5.00	-	-
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### Steel Failure

### Share Load

Characteristic resistance without lever arm	$V_{Rk,s}$	(kN)	0.40	0.40	0.90	0.90	1.70	1.70	3.10	3.10	4.90	4.90
Characteristic resistance without lever arm	$M_{Rk,s}$	(Nm)	0.40	0.40	1.10	1.10	2.60	2.60	6.70	6.70	13.00	13.00

### R(forEI) = 60 min

Effective embedment depth	$h_{ef}$	(mm)	32.00	47.00	39.00	59.00	48.00	68.00	65.00	85.00	80.00	99.00
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### Steel Failure

### Tension Load

Characteristic resistance	$N_{Rk,s}$	(kN)	0.30	0.30	0.80	0.80	1.30	1.30	2.40	2.40	3.70	3.70
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### Pull-Out Test Failure

Characteristic resistance	$N_{Rk,s}$	(kN)	0.80	1.30	1.50	2.30	2.30	3.00	4.00	5.00	-	-
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## Design Performance Data

Allowable values for resistance in case of Seismic performance category C2

Size			M10	M12	M16
Effective embedment depth	$h_{ef}$	(mm)	59.00	68.00	85.00

### Tension Load, Steel Failure

Characteristic resistance	$N_{Rk,s}$	(kN)	17.50	25.80	45.80
Partial safety factory	$\gamma_{MsN, seisc2}$	-	1.40	1.40	1.40

### Tension Load, Pull Out Failure

Characteristic resistance	$N_{Rk,p}$	(kN)	3.40	7.00	10.90
Partial safety factory	$\gamma_{inst}$	-	1.00	1.00	1.00

Allowable values for resistance in case of Seismic performance category C2

Size			M10	M12	M16
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### Shear Load, Steel Failure

Characteristic resistance without lever arm	$V_{Rk,s}$	(kN)	9.20	11.10	28.20
Partial safety factory	$\gamma_{MsV, seisc2}$	-	1.25	1.25	1.25

## Product Commercial Data

Product Code	Anchor Diameter	Anchor Length	Quantity (pcs) Box Outer	Pallet	Weight (kg) Box Outer	Pallet
IPBZ DPZF-08065	8	65	100	16000	2.8	474.6
IPBZ DPZF-08080	8	80	100	16000	3.2	544.7
IPBZ DPZF-08100	8	100	100	12000	3.9	494.3
IPBZ DPZF-08115	8	115	100	12000	4.3	541.3
IPBZ DPZF-10065	10	65	50	8000	2.4	409.4
IPBZ DPZF-10080	10	80	50	8000	2.8	471.1
IPBZ DPZF-10095	10	95	50	8000	3.1	528.2
IPBZ DPZF-10115	10	115	50	6000	3.6	463.3
IPBZ DPZF-10130	10	130	50	8000	4.0	670.2
IPBZ DPZF-12080	12	80	50	8000	4.1	682.0
IPBZ DPZF-12100	12	100	50	8000	4.8	794.3
IPBZ DPZF-12120	12	120	50	6000	5.4	679.8
IPBZ DPZF-12135	12	135	50	6000	6.1	758.9
IPBZ DPZF-12150	12	150	50	4000	6.6	557.2
IPBZ DPZF-16105	16	105	25	4000	4.6	765.7
IPBZ DPZF-16125	16	125	25	4000	5.3	869.6
IPBZ DPZF-16140	16	140	25	4000	5.7	941.2
IPBZ DPZF-16180	16	180	25	3000	7.1	883.3
IPBZ DPZF16220	16	220	25	3000	8.2	1018.9
IPBZ DPZF-20125	20	125	25	3000	8.2	1013.3
IPBZ DPZF-20160	20	160	25	2000	10.1	840.2
IPBZ DPZF-20200	20	200	10	1200	4.9	614.9

CHANNEL PARTNER



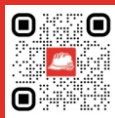
## INDO SPARK CONSTRUCTION SERVICES

### CORPORATE OFFICE

198, E ward, Tararani Chowk,  
Near Geeta Mandir,  
Kolhapur - 416 003 (Mah.India)  
Toll Free : 1800 123 500 023  
E-mail : mail@indospark.com

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