

STEEL BACK SUPPORT SYSTEM



Example- 1

Front To Back Channel with Welded Back Plate and Up & Down Bracket

Example- 2

Square Tube with Welded Channel & Double Pin L-Bracket

Example- 3

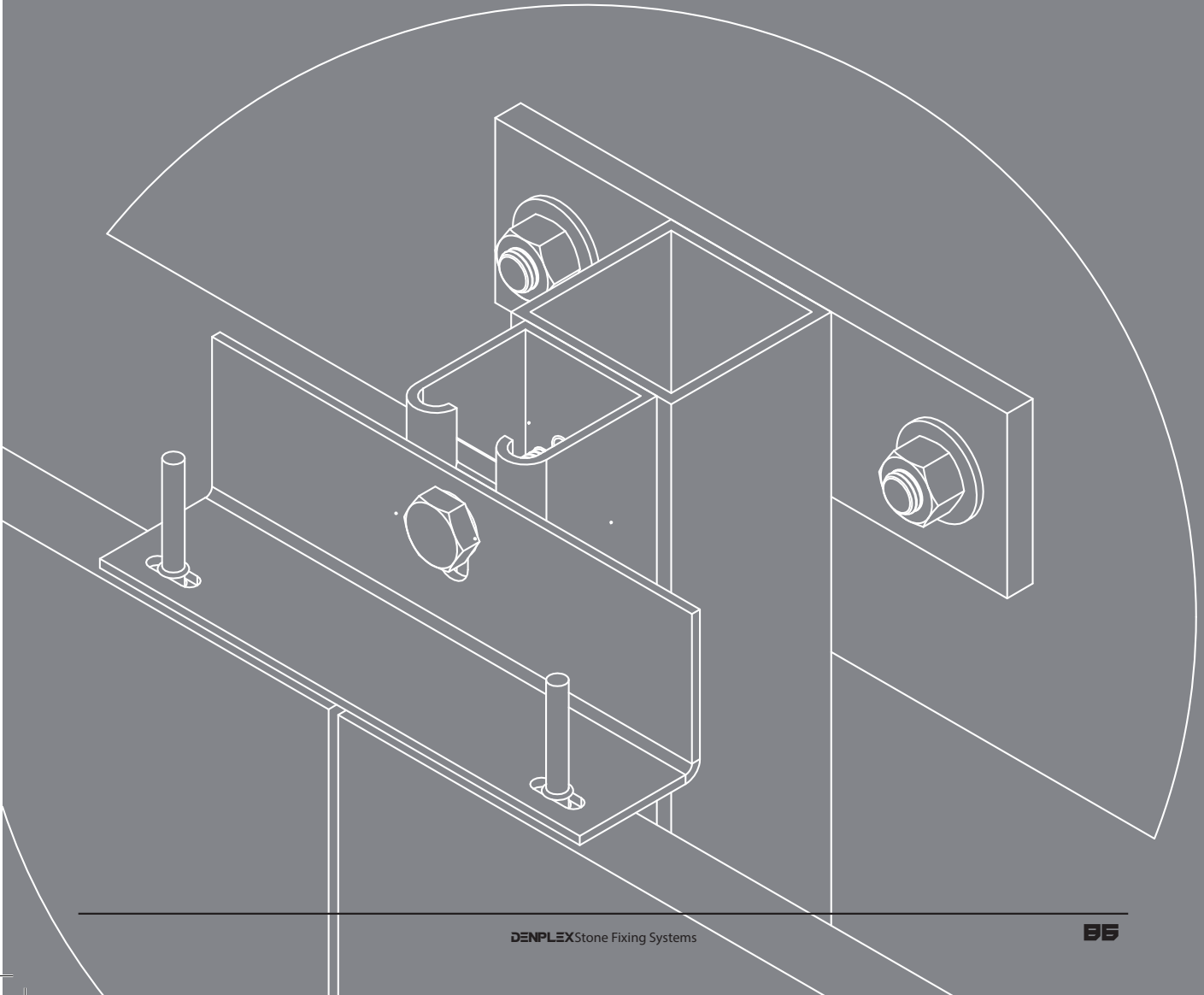
Single Channel with Omega Support and Z-Brackets

Example- 4

BTB (Back to Back Channels) with Omega Support and Z-Brackets

Example- 5

Cantilever Arm with BTB (Back to Back Channels) and Flat Head Bolt



EXAMPLES OF STEEL BACK SUPPORT SYSTEMS

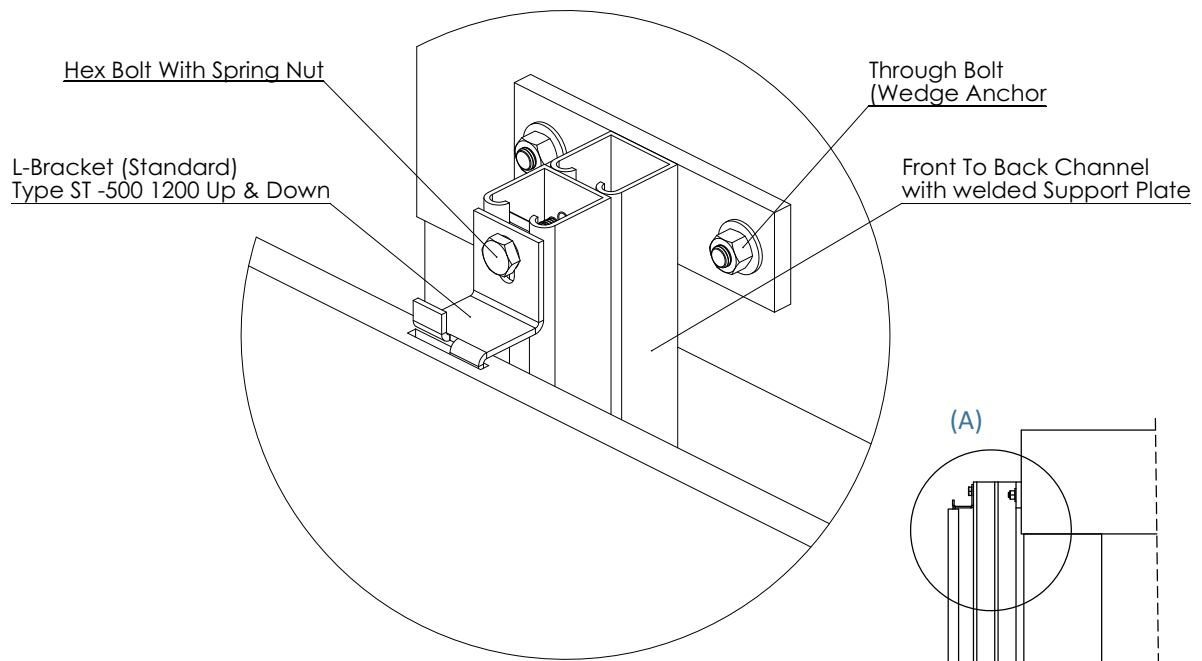
Example- 1 Front to Back Channel with Welded Back Plate and Up & Down Bracket

Floor to floor system using front to back channels with support plates and L-Brackets up & down with bolts and spring nuts fixed to the channels.

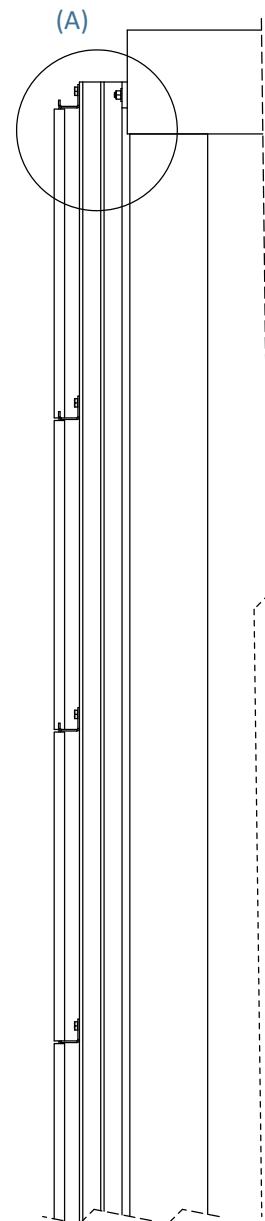
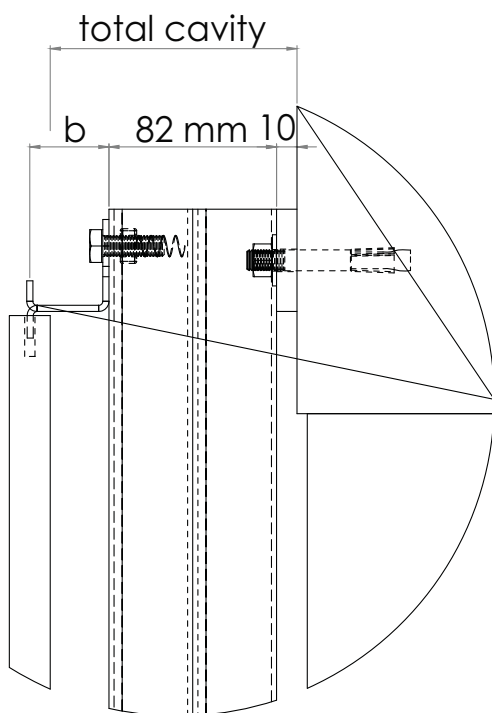
-Minimum cavity to backside of panel :100 mm

-Span \leq 3.00m





Detail (A)



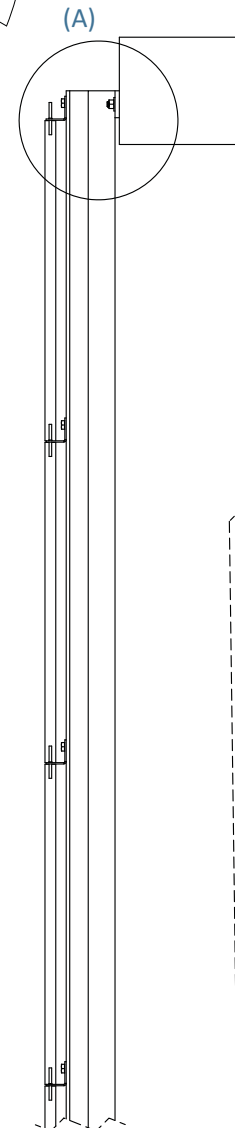
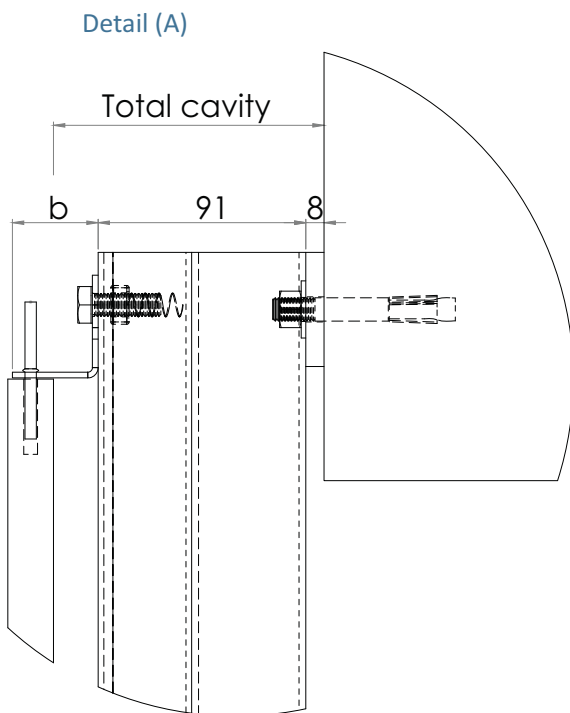
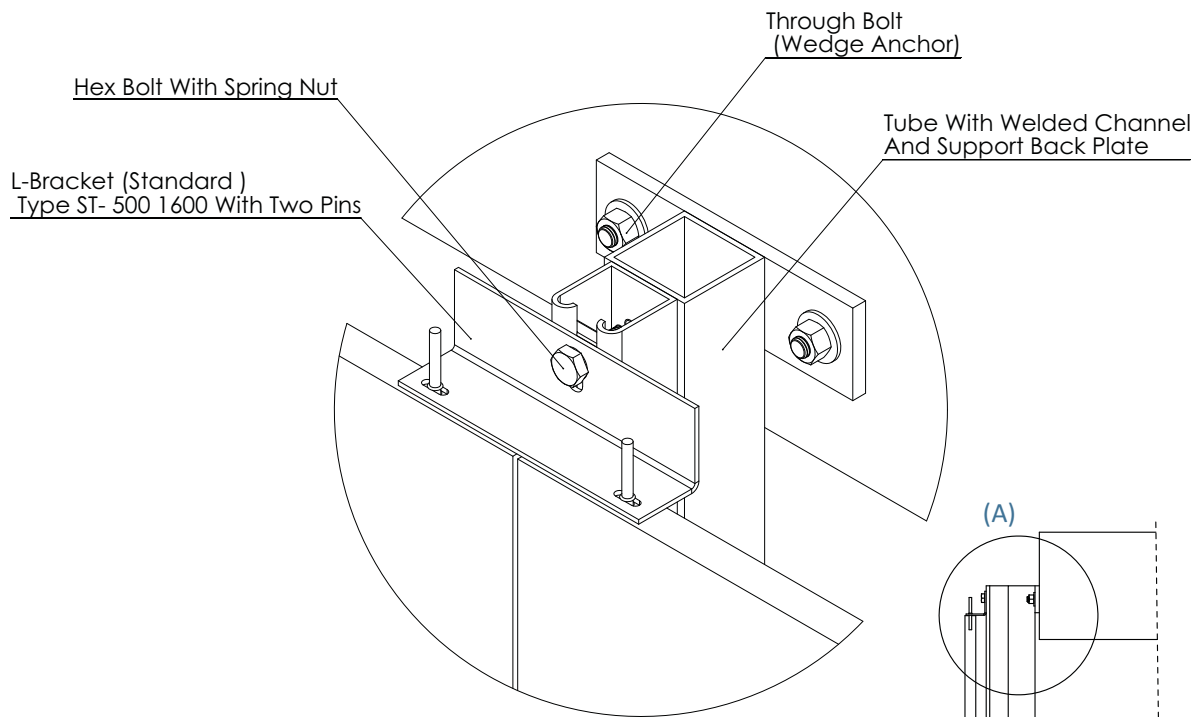
EXAMPLES OF STEEL BACK SUPPORT SYSTEMS

Example- 2 Square Tube with Welded Channel & Double Pin L-Bracket

Floor to floor system using square tubes with channels and L-Brackets double pin type with bolts and spring nuts fixed to the channels.

- Min cavity to backside of panel :100 mm
- Span \leq 3.00 m





EXAMPLES OF STEEL BACK SUPPORT SYSTEMS

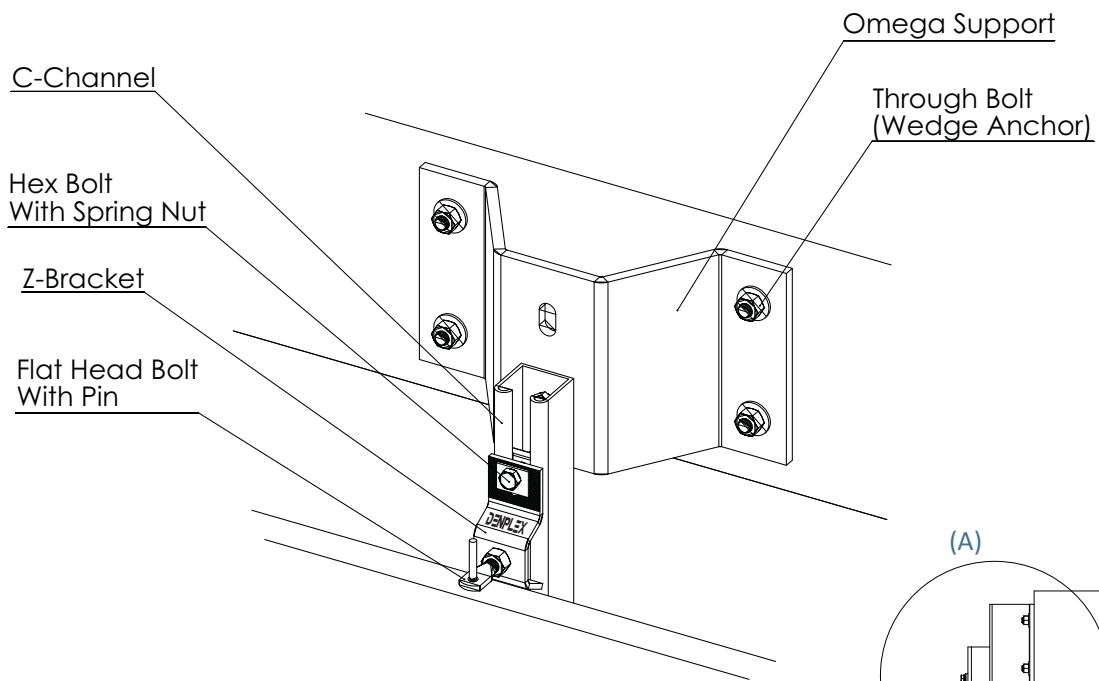
Example- 3 Single Channel with Omega Support and Z-Brackets

Steel back support system for large cavity using omega brackets ,channels and Z-brackets with bolts and spring nuts fixed to the channels and adjustable flat head bolts.

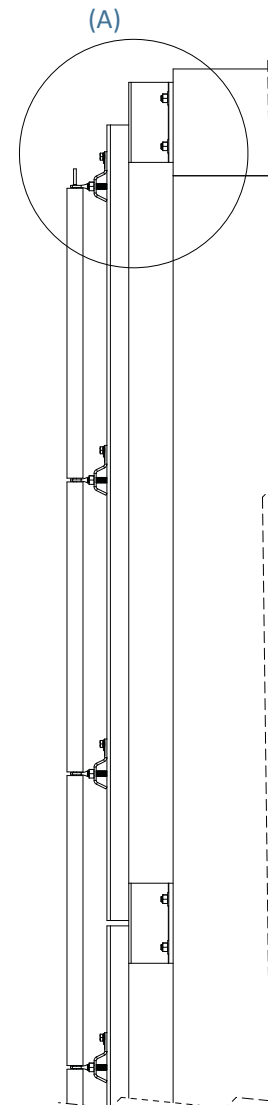
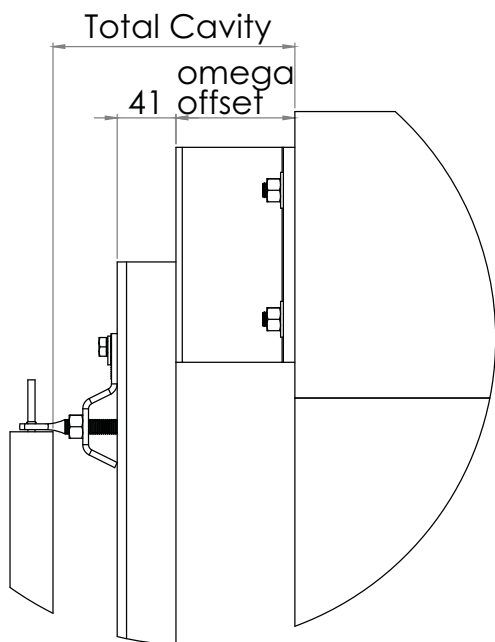
-For cavity \geq 150 mm

-Distance of Omega brackets 150~ cm (=Span of channels)





Detail (A)



EXAMPLES OF STEEL BACK SUPPORT SYSTEMS

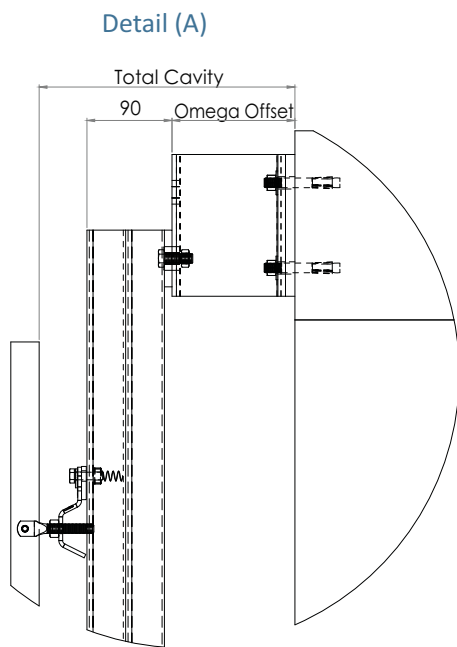
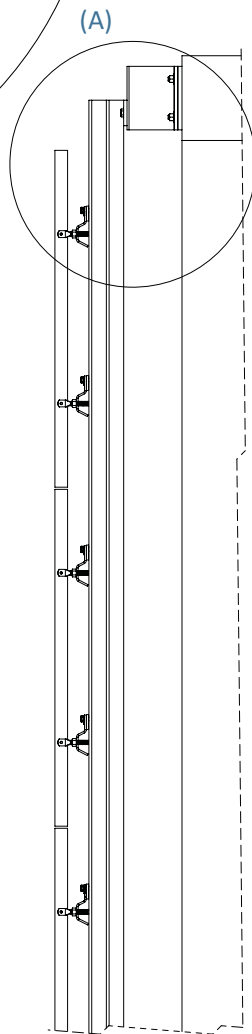
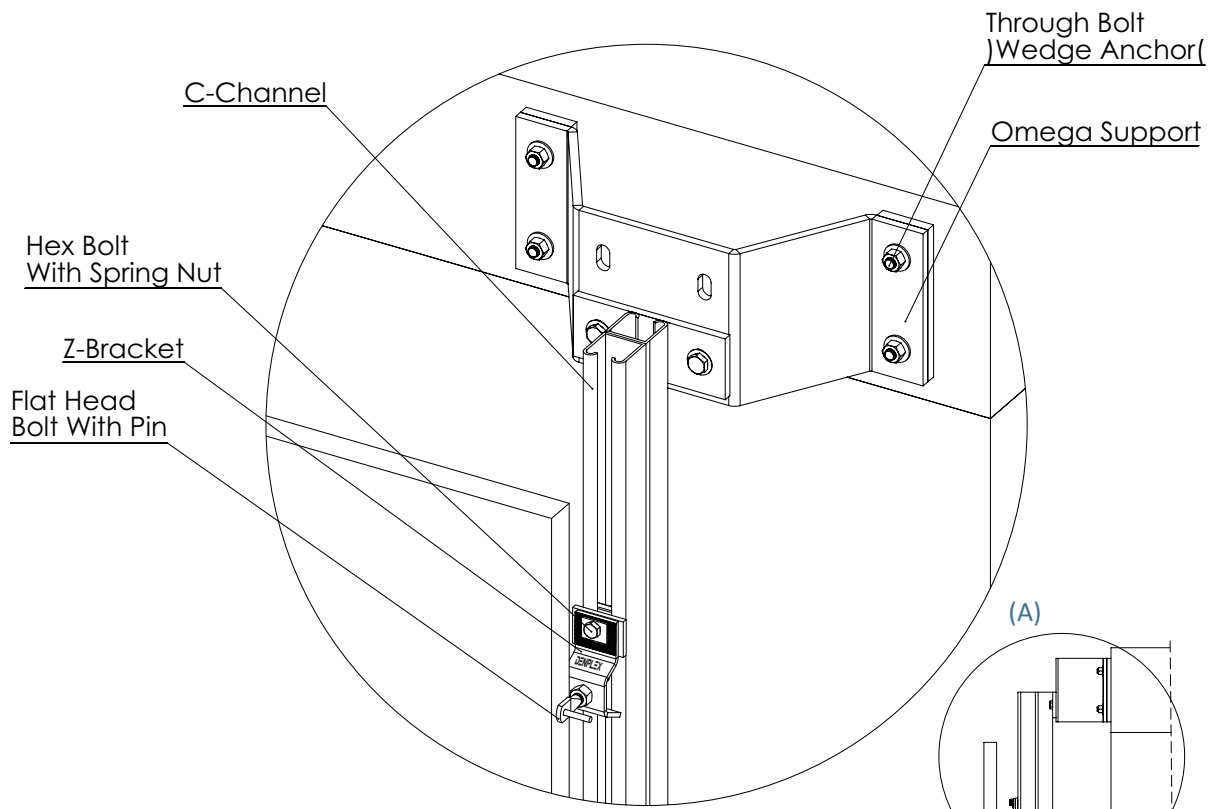
Example- 4 BTB (Back to Back Channels) with Omega Support and Z-brackets

Steel back-support system for large cavity using omega brackets ,channels and Z -brackets with bolts and spring nuts fixed to the channels and adjustable flat head bolts.

-For cavity ≥ 200 mm

-Distance of Omega brackets~ 200-300cm





EXAMPLES OF STEEL BACK SUPPORT SYSTEMS

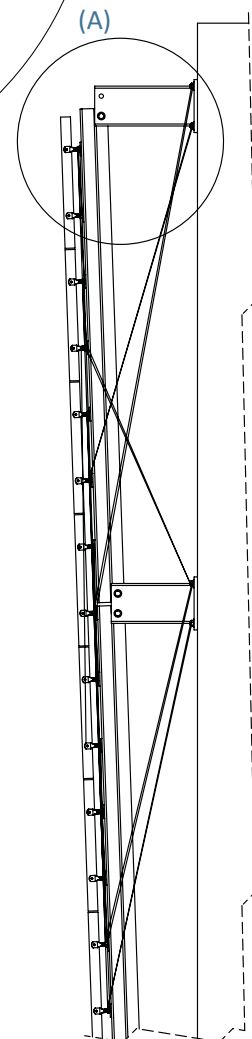
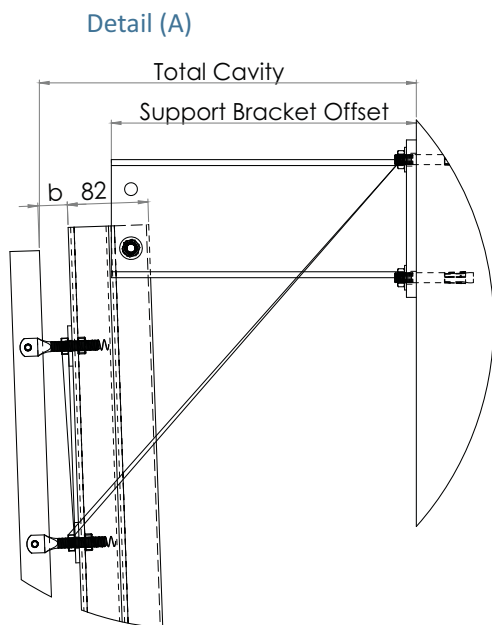
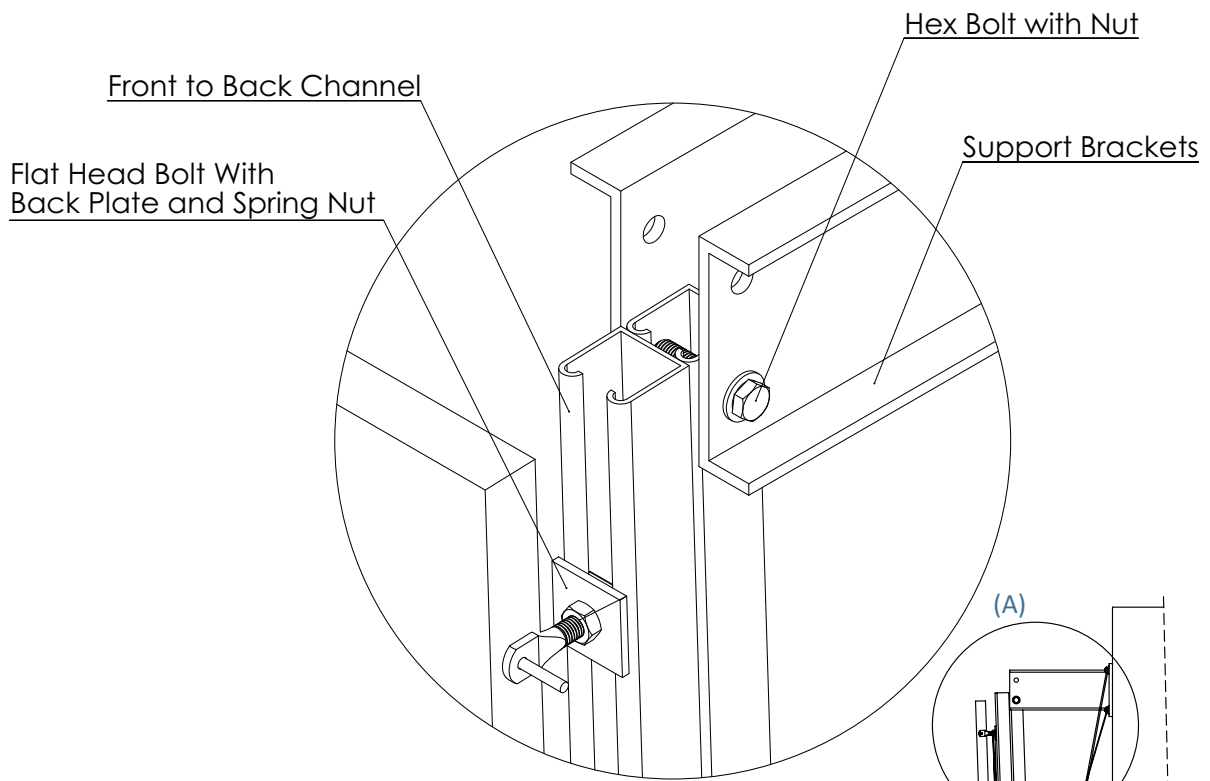
Example- 5 Cantilever Arm Support with BTB (Back to Back Channels) and Flat Head Bolt

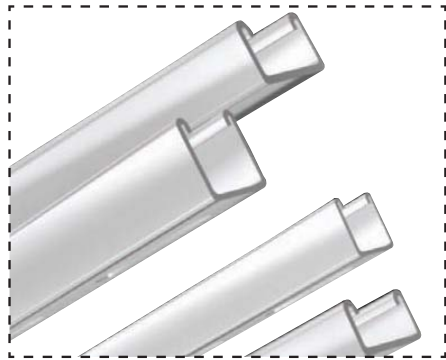
Steel back support system for adjustable large cavities using support brackets ,front to back channels and adjustable flat head bolts with back plates and spring nuts fixed to channels .

-For cavity ≥ 300 mm

-Distance of Omega brackets~ 3 m (=Span of channels).







Channel

DENPLEX metal framing channel is cold formed on modern rolling machines from low carbon steel manufactured according to BS 6946:1988. A continuous slot provides the ability to make attachments at any point.

Lengths

Standard length :3000mm with ± 3.2 mm length tolerance.
Custom lengths are available upon request.

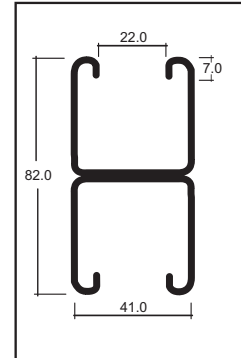
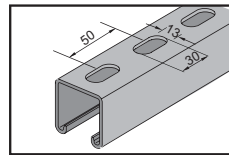
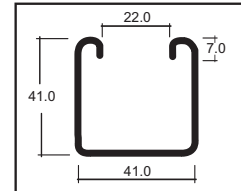
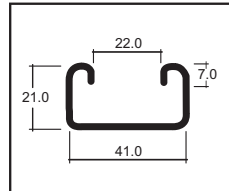
Finishes

Standard finishes :Pre-Galvanized finish (ASTM A653M coating G90 and G60) .
Hot-Dip Galvanized after fabrication (ASTM A123 or BSEN ISO1461:2005) .
Other custom coatings are available upon request.

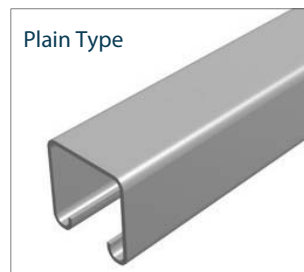
METAL FRAMING CHANNELS

Selection Chart

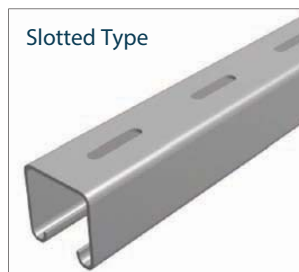
Part No	Channel Dimensions		Thickness
	Height "H"	Width "W"	
DCHS201	21.0 mm	41.0 mm	1.5 mm
DCHS401	41.0 mm	41.0 mm	1.5 mm
DCHS202	21.0 mm	41.0 mm	2.0 mm
DCHS402	41.0 mm	41.0 mm	2.0 mm
DCHS203	21.0 mm	41.0 mm	2.5 mm
DCHS403	41.0 mm	41.0 mm	2.5 mm



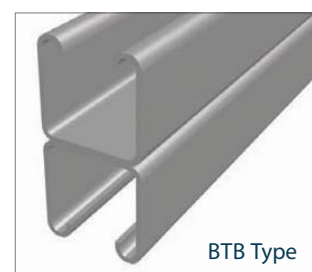
CHANNEL HOLE PATTERNS



Plain Type



Slotted Type



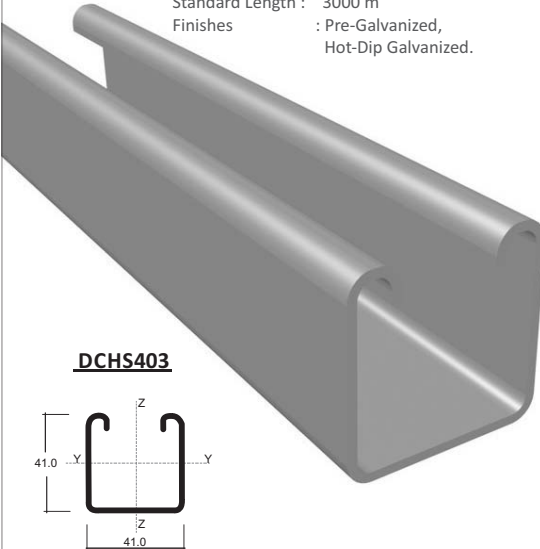
BTB Type

PT Type Channel		
Part No	Thickness mm.	Height "H"
DCHS201	1.5	21.0
DCHS401	1.5	41.0
DCHS202	2.0	21.0
DCHS402	2.0	41.0
DCHS203	2.5	21.0
DCHS403	2.5	41.0

ST Type Channel		
Part No	Thickness mm.	Height "H"
DCHS201	1.5	21.0
DCHS401	1.5	41.0
DCHS202	2.0	21.0
DCHS402	2.0	41.0
DCHS203	2.5	21.0
DCHS403	2.5	41.0

BTB Type Channel		
Part No	Thickness mm.	Height "H"
DCHBB2201	1.5	42.0
DCHBB4401	1.5	82.0
DCHBB2202	2.0	42.0
DCHBB4402	2.0	82.0
DCHBB2203	2.5	42.0
DCHBB4403	2.5	82.0

Load table for Single Beam with Uniform (Characteristic) Live-Load According to DIN 18 800



DCHS403

Thickness : 2.5 mm
 Standard Length : 3000 m
 Finishes : Pre-Galvanized,
 Hot-Dip Galvanized.

C-Channel:		41x41x2.5
Area of Shear (A_z)		1.67 cm ²
Moment of Inertia (I_y)		5.87 cm ⁴
Moment of Inertia (I_z)		8.76 cm ⁴
Min .Section Modulus (S_y)		2.72 cm ³
Warping Constant (I_w)		171.52 cm ⁶
Torsional Constant (I_t)		0.07 cm ⁴
Plastic Moment Cap ($M_{pl,V}$)		0.82 kNm
Self Weight (G)		2.32 kg/m

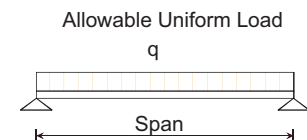
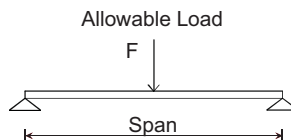
Chosen Material:	40 B = S 235 JRG2
Allowable Bending Stress	21,82 kN/cm ²
Allowable Shear Stress	12,60 kN/cm ²
Modulus of Elasticity	21.000 kN/cm ²

DSHS403

Beam Load Data

Span (L) [cm]	Allowable Load*		Deflection		Uniform Load* @	
	q [kN/m]	F [kN]	U [mm]	[L/ X]	L / 360 q [kN/m]	L / 180 q [kN/m]
50	10.10	2.50	0.83	600	10.10	10.10
60	7.00	2.10	1.20	500	7.00	7.00
70	5.20	1.80	1.65	420	5.20	5.20
80	4.00	1.60	2.16	370	4.00	4.00
90	3.10	1.40	2.69	340	2.90	3.10
100	2.50	1.30	3.30	300	2.10	2.50
125	1.60	1.00	5.16	240	1.10	1.60
150	1.10	0.80	7.35	200	0.60	1.10
175	0.80	0.70	9.91	180	0.40	0.80
200	0.63	0.60	13.31	150	0.30	0.50
225	0.50	0.60	16.92	130	0.20	0.40
250	0.41	0.50	21.15	120	x	0.30
275	0.33	0.50	24.92	110	x	0.20
300	0.28	0.40	29.95	100	x	x

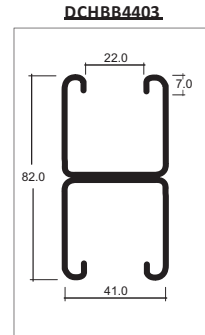
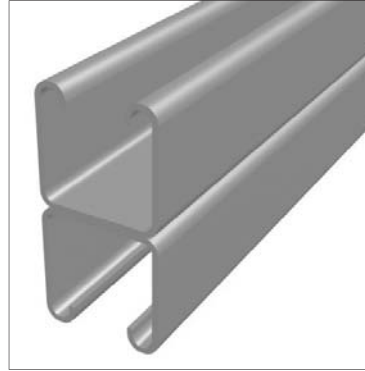
*Given loads are always" allowable characteristic live load"



DCHBB4403

C-Channel:	41x41x2.5 btb
Area of Shear (A_v)	2.37 cm ²
Moment of Inertia (I_y)	34.08 cm ⁴
Moment of Inertia (I_z)	17.56 cm ⁴
Min .Section Modulus (S_y)	8.31 cm ³
Warping Constant (I_w)	140.95 cm ⁶
Torsional Constant (I_T)	0.16 cm ⁴
Plastic Moment Cap ($M_{pl,v}$)	2.51 kNm
Self Weight (G)	4.70 kg/m

Thickness : 2.5 mm
 Standard Length : 3000 m
 Finishes : Pre-Galvanized,
 Hot-Dip Galvanized.



Chosen Material:	40 B = S 235 JRG2
Allowable Bending Stress	21.82 kN/cm ²
Allowable Shear Stress	12.60 kN/cm ²
Modulus of Elasticity	21.000 kN/cm ²

Beam Load Data

Span (L) [cm]	Allowable Load*		Deflection		Uniform Load* @	
	q [kN/m]	F [kN]	U [mm]	[L / X]	L / 360 q [kN/m]	L / 180 q [kN/m]
50	30.90	7.70	0.44	1.140	30.90	30.90
60	21.50	6.50	0.63	950	21.50	21.50
70	15.80	5.50	0.86	810	15.80	15.80
80	12.10	4.80	1.13	710	12.10	12.10
90	9.60	4.30	1.43	630	9.60	9.60
100	7.70	3.90	1.75	570	7.70	7.70
125	5.00	3.10	2.78	450	5.00	5.00
150	3.40	2.60	3.91	380	3.40	3.40
175	2.50	2.20	5.33	330	2.30	2.50
200	1.90	1.90	6.91	290	1.50	1.90
225	1.50	1.70	8.74	260	1.10	1.50
250	1.20	1.50	10.66	230	0.80	1.20
275	1.00	1.40	13.01	210	0.60	1.00
300	0.77	1.20	14.18	210	0.50	0.80

