

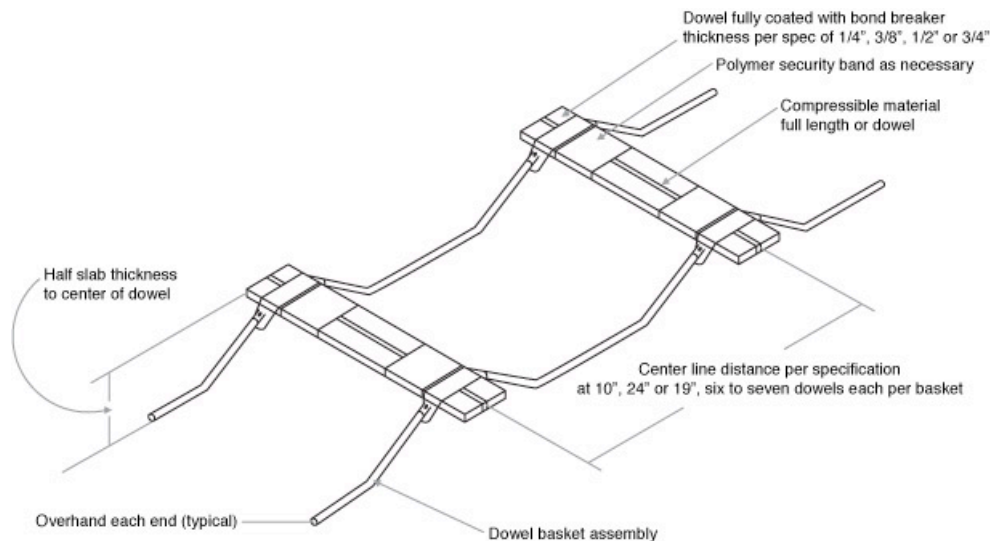
## Double Bar Plate Dowels for Saw-Cut Contraction Joints

### "W" EZbasket<sup>TM</sup> Specification

- All EZbasket<sup>TM</sup> products will be supplied by McTech Group Inc. 1-866-913-8363.
- Plate Dowels will be cut from hot rolled plate per ASTM A36 to within 0.010" of specified length.
- Side frame supports will be fabricated from 1/4" diameter cold drawn wire per ASTM A108 grade 1010-1020.
- Plate Dowels will be welded (on one end only) into the side frames, with the welds alternating along the length of the assembly.
- Specially designed elastomer with compressible material will be fitted between the Plate Dowels and should extend to within plus or minus 0.1875" of 2/3 the bar length.
- Eight gauge wires will be welded across the side frames at approximately 3' o/c to keep the assembly stable during shipping and installation or as needed.
- The finished assembly will hold the Plate Dowels to within plus or minus 1/8" of the required slab placement depth.
- The assemblies will be manufactured so that they stack on top of each other for transportation and remain stable under concrete placement.

**Table 1: Equivalency Table**

Rectangular Plate Dowel Size, Thickness x Width	3/4" Round Dowel Spacing	1" Round Dowel Spacing	1 1/4" Round Dowel Spacing
	12"                  18"	12"                  18"	12"                  18"
3/8" x 2.00"	18"                  24"		
1/2" x 2.50"		18"                  24"	
3/4" x 2.50"			18"                  24"



## Dowel Baskets - Application

### Load Capacities

Load capacities based upon the ACI 1956 Highway Dowel Design Report.  
 Load capacities were obtained by calculations prepared by TKF Engineering.  
 TKF calculations were reviewed and approved by CES, Inc.  
 Load table for 2" wide by 12" long dowels, thickness varies, 36ksi steel.  
 Point loads for approximately 3' x 3' area. Soil sub modulus (k)=200  
 Axle load based upon 24" and 36" spacing between wheels.  
 Dowels spacings of 24" and 18"

Slab thickness	Dowel thickness (in)	Maximum Single Point Load	Dowel Groups Maximum Load per Axle (lbs) Dowel plate spacing / load spacing			
			18 / 24	24 / 24	18 / 36	24 / 36
4"	0.2500	2766	7634	5634	9136	7294
	0.3125	3236	8378	6592	10689	8534
	0.3750	3678	9980	7492	12148	9698
5"	0.2500	2766	7164	5532	7634	8220
	0.3125	3236	8382	6472	8982	9618
	0.3750	3678	9525	7355	10151	10931
6"	0.2500	2766	8801	6638	10502	7952
	0.3125	3236	10297	7767	12882	9304
	0.3750	3678	11703	8827	13967	11033
7"	0.2500	2766	9078	7349	9415	8818
	0.3125	3236	10621	8599	11016	10317
	0.3750	3678	12070	9772	12519	11725
	0.5000	4497	14760	11949	15309	14337
8"	0.3785	3678	12240	10301	12949	12328
	0.5000	4497	15187	13042	15835	15075
	0.7500	5963	20137	16702	20996	19988
10"	0.3785	3678	14332	11390	16363	12045
	0.5000	4497	17526	13928	20009	14729
	0.7500	5963	23238	18467	26529	19529

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Point loads for approximately 3' x 3' area. Soil sub modulus (k)=200  
Axle load based upon 24" and 36" spacing between wheels.  
Dowels spacings of 24" and 18"

### 10" Inch Slab

Plate Size	Plate Spacing	Load Centered Number of Effective Plates	Load Centered Capacity	Load Between Number of Effective Plates	Load Centered Capacity
1/2"	24	2.62	36,822.95	2.52	35,417.49
1/2"	30	2.02	28,390.21	1.94	27,265.85
1/2"	36	1.78	25,017.12	1.65	23,190.03
1/2"	42	1.59	22,346.75	1.28	17,989.84
1/2"	48	1.39	19,535.84	1.17	16,443.84
5/8"	24	2.62	43,015.98	2.52	41,374.15
5/8"	30	2.02	33,164.99	1.94	31,851.53
5/8"	36	1.78	29,224.60	1.65	27,090.22
5/8"	42	1.59	26,105.12	1.28	21,015.44
5/8"	48	1.39	22,821.45	1.17	19,209.43
3/4"	24	2.62	48,822.46	2.52	46,959.01
3/4"	30	2.02	37,641.75	1.94	36,150.98
3/4"	36	1.78	33,169.46	1.65	30,746.97
3/4"	42	1.59	29,628.90	1.28	23,852.20
3/4"	48	1.39	25,901.99	1.17	21,802.40

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Load table for 2" wide by 12" long dowels, thickness varies, 36ksi steel.  
Point loads for approximately 3' x 3' area. Soil sub modulus (k)=200  
Axle load based upon 24" and 36" spacing between wheels.  
Dowels spacings of 24" and 18"

### 12" Inch Slab

Plate Size	Plate Spacing	Load Centered Number of Effective Plates	Load Centered Capacity	Load Between Number of Effective Plates	Load Centered Capacity
1/2"	24	2.88	44,047.14	2.78	39,071.68
1/2"	30	2.37	33,309.31	2.32	62,606.58
1/2"	36	1.94	27,265.85	1.97	27,687.45
1/2"	42	1.82	25,579.30	1.61	22,627.84
1/2"	48	1.60	22,487.30	1.31	18,411.47
5/8"	24	2.88	47,284.74	2.78	45,642.91
5/8"	30	2.37	38,911.40	2.32	38,090.48
5/8"	36	1.94	31,851.53	1.97	32,344.07
5/8"	42	1.82	29,881.33	1.61	26,433.48
5/8"	48	1.60	26,269.30	1.31	21,507.98
3/4"	24	2.88	53,667.40	2.78	51,803.99
3/4"	30	2.37	44,163.83	2.32	43,232.11
3/4"	36	1.94	36,150.98	1.97	36,710.02
3/4"	42	1.82	33,914.84	1.61	30,001.59
3/4"	48	1.60	29,815.24	1.31	24,411.23

## Dowel Baskets - Application

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Load table for 2" wide by 12" long dowels, thickness varies, 36ksi steel.

Point loads for approximately 3' x 3' area. Soil sub modulus (k)=200

Axle load based upon 24" and 36" spacing between wheels.

Dowels spacings of 24" and 18"

### 14" Inch Slab

Plate Size	Plate Spacing	Load Centered Number of Effective Plates	Load Centered Capacity	Load Between Number of Effective Plates	Load Centered Capacity
1/2"	24	3.31	46,520.60	3.27	45,958.41
1/2"	30	2.76	38,790.59	2.56	35,979.68
1/2"	36	2.29	32,184.94	2.21	31,060.58
1/2"	42	1.94	27,265.85	1.87	26,282.03
1/2"	48	1.78	25,017.12	1.58	22,206.21
5/8"	24	3.31	54,344.61	3.27	53,687.88
5/8"	30	2.76	45,314.54	2.56	42,030.88
5/8"	36	2.29	37,597.93	2.21	36,284.47
5/8"	42	1.94	31,851.53	1.87	30,702.24
5/8"	48	1.78	29,224.60	1.58	25,940.93
3/4"	24	3.31	61,680.29	3.27	60,934.91
3/4"	30	2.76	51,431.30	2.56	47,704.39
3/4"	36	2.29	42,673.07	2.21	41,182.39
3/4"	42	1.94	36,150.98	1.87	34,846.57
3/4"	48	1.78	33,169.46	1.58	29,442.55

## Dowel Baskets – ACI 360

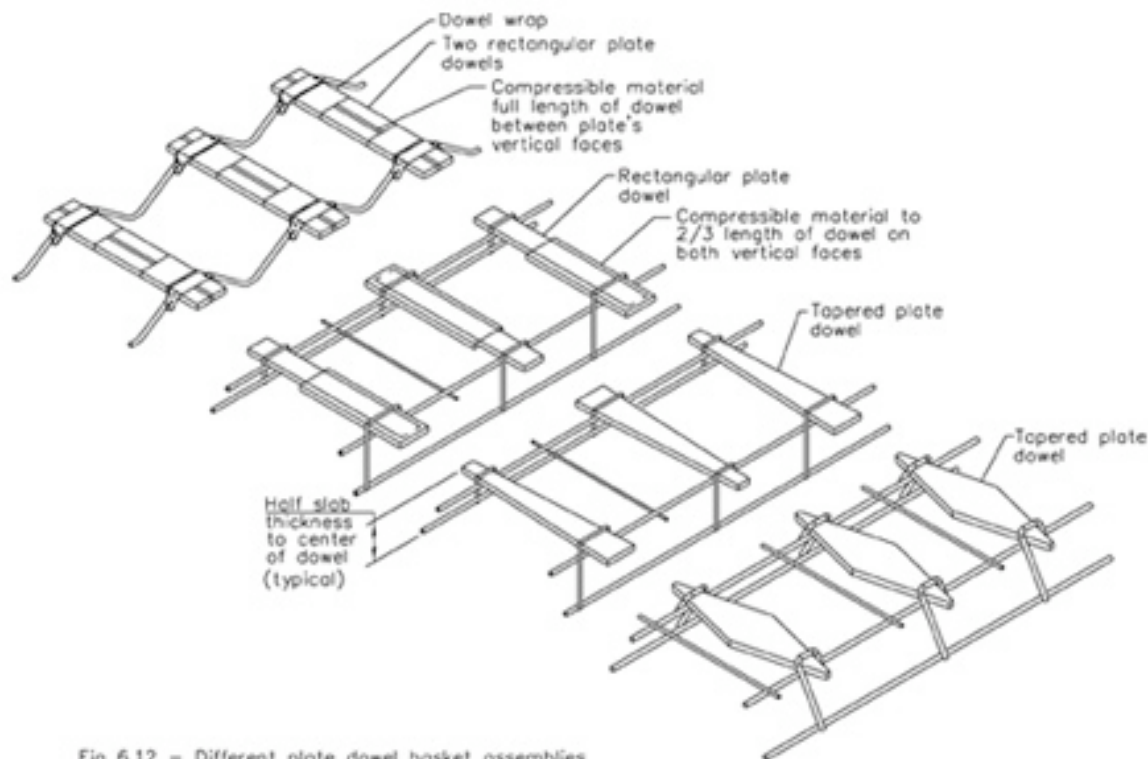


Fig 6.12 – Different plate dowel basket assemblies

**Table 5.1 – Dowel size and spacing for construction and contraction joints<sup>1</sup>**

Slab depth, in. (mm)	Dowel dimensions, in. (mm)			Dowel spacing center-to-center, in. (mm)		
	Round <sup>4</sup>	Square <sup>3,5</sup>	Plate Dowel	Round <sup>4</sup>	Square <sup>3,5</sup>	Plate Dowel
5 to 6 (130 to 150)	3/4 x 14 (19 x 360)	3/4 x 14 (19 x 360)	M/R <sup>2</sup>	12 (300)	14 (360)	18 (460)
7 to 8 (180 to 200)	1 x 16 (25 x 410)	1 x 16 (25 x 410)	M/R <sup>2</sup>	12 (300)	14 (360)	18 (460)
9 to 11 (230 to 280)	1-1/4 x 18 (32 x 460)	1-1/4 x 18 (32 x 450)	M/R <sup>2</sup>	12 (300)	12 (300)	18 (460)

1. Table values based on a maximum joint opening of 0.20 in. (5 mm). Dowels must be carefully aligned and supported during concrete operations. Misaligned dowels may lead to cracking. Spacings are based on dowels in direct contact on the concrete with a thin bond breaker. Total dowel length includes allowance made for joint opening and minor errors in positioning dowels.

2. M/R= Manufacturers' Recommendations. Because of the various plate dowel geometries and installation devices available from the different manufacturers, the manufacturers should be consulted for their recommended plate dowel size and spacing.

3. Square dowels should have compressible material securely attached on both vertical faces.

4. ACI Committee 325 (1956)

5. Walker and Holland (1998)