

Bond Durability of GFRP Bars in Alkaline Environment

3.1	11.3	3.4	13.1												
3.2	11.4	3.5	13.1												
3.3	11.7	3.6	13.3												
3.4	11.8	3.7	13.5												
3.5	12.0	3.8	13.5												
3.6	12.2	3.9	13.7												
3.7	12.3	4.0	13.8												
3.8	12.4	4.1	14.0												
3.9	12.5	4.2	14.1												
4.1	12.6	4.3	14.2												
4.2	12.6	4.4	14.3												
4.3	12.7	4.5	14.4												
4.4	12.9	4.6	14.5												
6.4	13.0	4.7	14.7												
		4.8	14.7												
		4.9	14.8												
		5.0	15.1												
		5.1	15.1												
		5.2	15.2												
		5.4	15.3												
		5.5	15.5												
		5.6	15.6												
		5.9	15.7												
		6.0	15.7												
		6.1	15.9												
		6.2	16.3												
		6.3	16.4												
		9.0	16.5												
		9.1	16.6												
		9.2	16.7												
		9.3	17.3												

Here, s – Slip, τ – Bond stress, 8-1 indicates specimen ID, 8 stands for bar diameter and 1 is for specimen number

Bond slip data for pull out specimens subjected to alkaline exposure for 90 days

The pull-out specimens were tested after 90 days of alkaline exposure whose bond-slip data is presented in

Table .

Table 2 Bond-slip data of specimens exposed to alkaline solution for 90 days

8-1		8-2		8-3		10-1		10-2		10-3		12-1		12-2		12-3	
s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.3	0.0	0.5	0.0	0.0	0.0	0.4	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.3	0.0	0.4
0.0	0.4	0.1	0.7	0.1	0.0	0.0	0.6	0.0	0.4	0.0	0.6	0.0	0.4	0.0	0.4	0.0	0.5
0.1	0.6	0.1	0.9	0.1	0.3	0.1	0.7	0.0	0.6	0.0	1.1	0.0	0.4	0.0	0.6	0.0	0.7
0.1	0.7	0.1	1.3	0.1	0.3	0.1	0.9	0.0	0.8	0.0	1.4	0.0	0.6	0.0	0.8	0.0	1.0
0.1	0.8	0.1	1.5	0.2	0.4	0.1	1.1	0.0	0.9	0.1	1.7	0.0	0.7	0.0	1.1	0.0	1.3
0.1	0.9	0.2	1.6	0.2	0.5	0.1	1.2	0.0	1.2	0.1	2.0	0.0	0.8	0.0	1.2	0.0	1.6
0.2	1.1	0.2	1.9	0.2	0.6	0.1	1.4	0.0	1.5	0.1	2.5	0.1	1.0	0.0	1.4	0.1	1.7
0.2	1.1	0.2	2.1	0.2	0.8	0.1	1.8	0.0	1.6	0.1	2.7	0.1	1.2	0.0	1.6	0.1	2.1
0.2	1.2	0.3	2.4	0.3	0.8	0.1	2.0	0.0	2.1	0.1	2.9	0.1	1.3	0.0	1.7	0.1	2.3
0.2	1.3	0.3	2.9	0.3	1.0	0.1	2.3	0.0	2.3	0.1	3.3	0.1	1.5	0.1	1.8	0.1	2.5
0.3	1.5	0.4	3.4	0.4	1.1	0.2	2.5	0.0	2.5	0.1	3.5	0.1	1.6	0.1	2.0	0.1	3.0
0.3	1.6	0.4	3.6	0.4	1.3	0.2	2.9	0.0	2.9	0.2	3.8	0.1	1.8	0.1	2.2	0.1	3.1
0.3	1.8	0.4	4.2	0.5	1.5	0.2	3.1	0.0	3.0	0.2	4.3	0.1	1.9	0.1	2.2	0.1	3.3
0.3	1.9	0.5	4.5	0.5	1.6	0.2	3.4	0.0	3.5	0.2	4.7	0.1	2.1	0.1	2.3	0.1	3.7
0.4	2.1	0.5	4.9	0.5	1.7	0.2	3.8	0.0	3.9	0.2	5.0	0.1	2.3	0.1	2.5	0.1	3.7
0.4	2.3	0.6	5.3	0.6	1.9	0.2	4.0	0.0	4.1	0.2	5.2	0.1	2.5	0.1	2.8	0.2	4.1
0.4	2.4	0.7	6.1	0.7	2.2	0.2	4.3	0.1	4.4	0.3	5.7	0.1	2.7	0.1	2.9	0.2	4.2
0.4	2.5	0.7	6.3	0.7	2.2	0.2	4.3	0.1	4.7	0.3	5.8	0.2	2.9	0.1	2.9	0.2	4.6
0.4	2.7	0.7	6.5	0.7	2.4	0.3	4.6	0.1	4.8	0.3	6.3	0.2	3.0	0.1	3.0	0.2	5.0
0.5	2.9	0.7	6.6	0.8	2.6	0.3	4.6	0.1	4.8	0.3	6.6	0.2	3.1	0.1	3.2	0.2	5.2
0.5	3.1	0.7	6.7	0.8	2.7	0.3	4.8	0.1	5.0	0.4	7.1	0.2	3.3	0.1	3.3	0.2	5.4
0.6	3.3	0.8	7.0	0.8	2.9	0.3	5.1	0.1	5.3	0.4	7.6	0.2	3.5	0.1	3.4	0.2	5.8
0.6	3.3	0.8	7.3	0.9	3.0	0.3	5.2	0.1	5.6	0.4	8.0	0.2	3.8	0.1	3.6	0.2	6.0
0.6	3.5	0.9	7.7	0.9	3.3	0.3	5.5	0.1	5.7	0.5	8.3	0.2	3.9	0.1	3.7	0.2	6.6
0.7	3.8	0.9	8.1	0.9	3.5	0.3	5.7	0.1	6.0	0.5	8.6	0.2	4.1	0.1	3.9	0.3	6.8
0.7	3.9	0.9	8.1	1.0	3.7	0.3	5.8	0.1	6.3	0.6	8.9	0.2	4.3	0.2	4.0	0.3	6.9
0.7	4.2	1.0	8.6	1.1	4.0	0.3	5.8	0.1	6.5	0.6	9.5	0.3	4.4	0.2	4.2	0.3	7.1
0.8	4.4	1.0	9.2	1.1	4.2	0.3	6.1	0.1	6.6	0.6	9.6	0.3	4.6	0.2	4.3	0.3	7.2
0.8	4.6	1.0	9.3	1.1	4.4	0.4	6.1	0.2	6.8	0.7	9.9	0.3	4.7	0.2	4.6	0.3	7.4
0.9	4.9	1.1	9.4	1.2	4.6	0.4	6.3	0.2	6.9	0.7	10.2	0.3	5.0	0.2	4.8	0.3	7.7
0.9	5.0	1.1	9.8	1.3	4.9	0.4	6.5	0.2	7.1	0.8	10.3	0.3	5.0	0.2	5.0	0.3	8.1

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0.9	5.3	1.2	10.0	1.3	5.1	0.4	6.7	0.2	7.1	0.8	10.8	0.3	5.2	0.2	5.3	0.3	8.3
1.0	5.5	1.2	10.3	1.4	5.5	0.4	6.7	0.2	7.3	0.8	10.9	0.3	5.3	0.2	5.3	0.4	8.5
1.0	5.7	1.2	10.6	1.4	5.6	0.4	6.9	0.2	7.4	0.9	11.1	0.3	5.4	0.2	5.3	0.4	8.8
1.0	5.9	1.3	10.9	1.5	5.9	0.4	7.2	0.2	7.6	0.9	11.3	0.3	5.5	0.3	5.5	0.4	9.0
1.1	6.0	1.3	11.1	1.5	6.1	0.4	7.4	0.2	7.7	1.0	11.8	0.4	5.7	0.3	5.7	0.4	9.4
1.1	6.1	1.4	11.5	1.6	6.2	0.4	7.4	0.2	7.8	1.0	11.9	0.4	5.9	0.3	6.1	0.4	9.7
1.1	6.2	1.4	11.8	1.6	6.5	0.5	7.7	0.2	8.0	1.1	12.2	0.4	6.1	0.3	6.3	0.5	10.0
1.1	6.4	1.5	12.1	1.6	6.6	0.5	7.8	0.2	8.1	1.1	12.4	0.4	6.2	0.3	6.5	0.5	10.2
1.2	6.6	1.5	12.5	1.7	6.7	0.5	8.0	0.2	8.4	1.1	12.6	0.4	6.3	0.3	6.7	0.5	10.5
1.2	6.7	1.6	12.8	1.7	7.1	0.5	8.1	0.3	8.8	1.2	12.8	0.4	6.4	0.4	6.9	0.5	10.7
1.2	6.9	1.7	13.1	1.8	7.3	0.5	8.2	0.3	8.8	1.2	13.0	0.4	6.5	0.4	6.9	0.6	11.1
1.3	7.0	1.7	13.1	1.8	7.4	0.5	8.3	0.3	9.1	1.3	13.2	0.4	6.7	0.4	6.8	0.6	11.4
1.3	7.1	1.7	13.3	1.8	7.6	0.5	8.3	0.4	9.1	1.3	13.5	0.4	6.8	0.4	6.9	0.6	11.6
1.3	7.4	1.7	13.5	1.9	7.8	0.5	8.6	0.4	9.3	1.3	13.6	0.5	6.9	0.4	7.2	0.6	11.8
1.4	7.8	1.8	13.7	2.0	8.0	0.5	8.7	0.4	9.4	1.4	13.8	0.5	7.0	0.4	7.3	0.7	12.1
1.4	7.9	1.8	13.9	2.0	8.4	0.5	8.8	0.4	9.8	1.4	13.9	0.5	7.2	0.4	7.5	0.7	12.4
1.5	8.0	1.9	14.1	2.1	8.7	0.5	8.9	0.4	9.8	1.4	14.0	0.5	7.3	0.4	7.7	0.7	12.6
1.5	8.2	1.9	14.4	2.2	9.0	0.6	9.3	0.5	9.9	1.4	14.1	0.5	7.5	0.4	7.9	0.7	12.9
1.5	8.4	2.0	14.6	2.2	9.2	0.6	9.5	0.5	9.9	1.5	14.4	0.5	7.6	0.4	8.0	0.8	13.2
1.6	8.7	2.0	14.8	2.3	9.6	0.6	9.5	0.5	10.0	1.5	14.6	0.5	7.8	0.5	8.2	0.8	13.3
1.6	9.0	2.1	15.0	2.4	9.8	0.6	9.7	0.5	10.2	1.5	14.6	0.5	7.8	0.5	8.4	0.8	13.5
1.7	9.4	2.1	15.1	2.4	10.1	0.6	9.8	0.5	10.3	1.6	14.8	0.6	7.9	0.5	8.4	0.8	13.6
1.8	9.7	2.2	15.4	2.5	10.3	0.6	10.0	0.6	10.4	1.6	14.8	0.6	8.1	0.5	8.8	0.8	13.8
1.8	10.1	2.2	15.7	2.5	10.6	0.6	10.2	0.6	10.7	1.6	14.8	0.6	8.3	0.5	8.9	0.9	14.2
1.9	10.3	2.3	16.1	2.6	11.0	0.6	10.5	0.6	10.8	1.6	14.8	0.6	8.4	0.5	9.1	0.9	14.5
1.9	10.7	2.3	16.1	2.7	11.2	0.6	10.6	0.7	11.0	1.6	15.0	0.6	8.5	0.6	9.3	0.9	14.6
2.0	11.0	2.4	16.3	2.7	11.3	0.7	11.0	0.7	11.1	1.7	15.1	0.6	8.6	0.6	9.4	1.0	14.9
2.0	11.2	2.4	16.5	2.8	11.4	0.7	11.0	0.7	11.2	1.7	15.4	0.6	8.9	0.6	9.6	1.0	15.0
2.0	11.4	2.5	16.7	2.8	11.7	0.7	11.3	0.7	11.3	1.8	15.4	0.6	8.9	0.6	9.8	1.0	15.1
2.1	11.7	2.5	16.9	2.8	12.1	0.7	11.4	0.7	11.3	1.8	15.5	0.6	9.0	0.6	10.0	1.0	15.3
2.1	11.8	2.6	16.9	2.9	12.2	0.7	11.5	0.8	11.7	1.8	15.7	0.7	9.1	0.6	10.1	1.1	15.3
2.2	12.1	2.6	17.1	2.9	12.2	0.7	11.7	0.8	11.7	1.9	15.9	0.7	9.3	0.7	10.3	1.1	15.5
2.2	12.3	2.7	17.4	3.0	12.4	0.7	12.0	0.8	11.7	1.9	15.9	0.7	9.4	0.7	10.4	1.1	15.7
2.3	12.6	2.7	17.6	3.0	12.6	0.7	12.0	0.8	11.7	1.9	16.1	0.7	9.4	0.7	10.6	1.1	15.9
2.3	12.8	2.7	17.7	3.0	12.7	0.8	12.0	0.9	11.7	1.9	16.1	0.7	9.5	0.7	10.8	1.2	16.0
2.4	13.2	2.8	17.9	3.1	13.0	0.8	12.3	0.9	11.7	2.0	16.3	0.7	9.6	0.7	10.8	1.2	16.1
2.4	13.5	2.9	18.1	3.1	13.0	0.8	12.4	0.9	11.7	2.0	16.4	0.7	9.7	0.8	10.9	1.2	16.2
2.5	13.7	2.9	18.3	3.2	13.1	0.8	12.7	1.0	11.9	2.1	16.6	0.8	9.8	0.8	11.0	1.2	16.3
2.5	13.9	2.9	18.4	3.2	13.3	0.8	12.9	1.0	12.2	2.1	16.6	0.8	9.9	0.8	11.2	1.3	16.3
2.6	14.1			3.2	13.4	0.8	13.1	1.0	12.3	2.1	16.8	0.8	10.1	0.8	11.5	1.3	16.6
2.6	14.2			3.3	13.5	0.8	13.2	1.0	12.3	2.1	16.9	0.8	10.2	0.8	11.7	1.3	16.7
2.7	14.4			3.3	13.8	0.9	13.5	1.1	12.5	2.2	17.0	0.8	10.3	0.9	11.9	1.3	16.7
2.8	14.7			3.4	13.9	0.9	13.7	1.1	12.7	2.2	17.1	0.8	10.5	0.9	12.0	1.3	16.8

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2.9	15.0			3.4	14.5	0.9	13.8	1.1	12.8	2.2	17.1	0.8	10.6	0.9	12.2	1.4	16.8
2.9	15.2			3.5	14.6	0.9	14.0	1.2	13.1	2.2	17.1	0.9	10.7	0.9	12.2	1.4	16.8
3.0	15.5			3.6	14.9	0.9	14.4	1.2	13.2	2.3	17.2	0.9	10.7	0.9	12.3	1.4	16.9
3.0	15.5			3.6	15.0	0.9	14.5	1.2	13.3	2.3	17.3	0.9	10.9	0.9	12.4	1.4	17.0
3.1	15.7			3.7	15.2	1.0	14.6	1.2	13.4	2.4	17.4	0.9	10.9	0.9	12.4	1.4	17.2
3.1	16.0			3.7	15.2	1.0	14.7	1.3	13.5	2.4	17.4	0.9	11.1	1.0	12.6	1.5	17.2
3.1	16.1			3.8	15.5	1.0	14.8	1.3	13.6	2.4	17.4	0.9	11.2	1.0	12.8	1.5	17.2
3.2	16.2			3.9	15.9	1.0	14.9	1.3	13.7	2.4	17.5	0.9	11.2	1.0	12.9	1.5	17.3
3.2	16.4			3.9	16.0	1.0	15.0	1.4	13.8	2.5	17.5	0.9	11.3	1.0	13.0	1.5	17.3
3.3	16.5			4.0	16.2	1.0	15.2	1.4	13.9	2.5	17.6	0.9	11.3	1.0	13.1	1.5	17.4
				4.1	16.3	1.0	15.3	1.4	14.0	2.5	17.7			1.1	13.2	1.5	17.4
				4.2	16.5	1.0	15.5	1.5	14.1	2.6	17.7			1.1	13.3	1.6	17.4
				4.2	16.5	1.1	15.7	1.5	14.2	2.6	17.7			1.1	13.6	1.6	17.4
				4.3	16.5	1.1	15.8	1.5	14.4	2.7	17.7			1.1	13.9	1.6	17.4
				4.4	16.5	1.1	15.9	1.5	14.4	2.7	17.7			1.1	13.9	1.6	17.4
				4.5	16.3	1.1	16.1	1.6	14.5	2.7	17.6			1.2	13.9	1.6	17.4
				4.6	16.2	1.1	16.2	1.6	14.6	2.7	17.5			1.2	14.1	1.6	17.4
				4.6	16.2	1.1	16.3	1.6	14.6	2.8	17.5			1.2	14.2	1.7	17.3
				4.6	16.2	1.2	16.4	1.6	14.6	2.8	17.3			1.2	14.2	1.7	17.3
				4.7	16.1	1.2	16.5	1.7	14.7	2.8	17.2			1.2	14.2	1.7	17.2
				4.7	15.9	1.2	16.6	1.7	14.9	2.8	17.1			1.3	14.3	1.7	17.2
						1.2	16.6	1.8	15.1	2.9	17.1			1.3	14.3	1.7	17.2
						1.2	16.6	1.8	15.1	2.9	17.0			1.3	14.3	1.7	17.1
						1.2	16.6	1.8	15.1					1.3	14.2	1.7	17.1
						1.3	16.6	1.8	15.1					1.3	14.4	1.7	16.9
						1.3	16.7	1.9	15.1					1.4	14.5	1.8	16.8
						1.3	16.7	1.9	15.2					1.4	14.5	1.8	16.8
						1.3	16.7	1.9	15.2					1.4	14.5	1.8	16.8
						1.3	16.7	2.0	15.2					1.4	14.5	1.8	16.7
						1.3	16.6	2.0	15.3					1.4	14.7	1.8	16.6
						1.3	16.6	2.0	15.3					1.4	14.7	1.8	16.6
						1.4	16.6	2.0	15.2					1.5	15.0	1.8	16.5
						1.4	16.6	2.0	15.2					1.5	15.0	1.8	16.4

Here, s – Slip, τ – Bond stress, 8-1 indicates specimen ID, 8 stands for bar diameter and 1 is for specimen number

Bond slip data for pullout specimens subjected to alkaline exposure for 180 days

The pull-out specimens were tested after 180 days of alkaline exposure whose bond-slip data is presented in

Table 3.**Table 3 Bond-slip data of specimens exposed to alkaline solution for 180 days**

8-1		8-2		10-1		10-2		10-3		12-1		12-2		12-3	
s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)	s (mm)	τ (MPa)
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.3	0.0	0.1	0.0	0.2	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.4	0.0	0.1
0.1	0.5	0.0	0.3	0.0	0.3	0.0	0.5	0.0	0.2	0.0	0.2	0.0	0.8	0.0	0.3
0.1	0.9	0.0	0.4	0.0	0.3	0.0	0.8	0.0	0.3	0.0	0.3	0.0	1.1	0.0	0.5
0.1	1.1	0.0	0.5	0.0	0.6	0.1	1.0	0.1	0.4	0.0	0.6	0.0	1.1	0.0	0.5
0.1	1.4	0.0	0.7	0.0	0.8	0.1	1.4	0.1	0.6	0.0	0.6	0.0	1.5	0.0	0.7
0.1	1.7	0.0	0.8	0.0	1.0	0.1	1.6	0.1	0.6	0.0	0.8	0.0	1.7	0.0	0.8
0.1	2.0	0.1	1.0	0.1	1.3	0.1	1.6	0.1	0.8	0.1	1.0	0.0	1.9	0.0	1.0
0.1	2.1	0.1	1.3	0.1	1.5	0.1	1.9	0.1	0.9	0.1	1.2	0.0	2.1	0.0	1.2
0.1	2.4	0.1	1.3	0.1	1.8	0.1	2.1	0.2	1.1	0.1	1.2	0.1	2.4	0.0	1.6
0.1	2.7	0.1	1.5	0.1	2.0	0.1	2.1	0.2	1.3	0.1	1.3	0.1	2.7	0.0	1.7
0.1	3.1	0.1	1.7	0.1	2.2	0.2	2.4	0.2	1.6	0.1	1.5	0.1	2.9	0.0	2.0
0.1	3.4	0.1	1.9	0.1	2.3	0.2	2.6	0.2	1.7	0.1	1.6	0.1	3.1	0.0	2.2
0.1	3.7	0.1	2.0	0.1	2.5	0.2	2.8	0.2	1.9	0.1	1.6	0.1	3.3	0.1	2.3
0.1	4.0	0.1	2.2	0.2	2.8	0.2	3.0	0.2	2.0	0.1	1.8	0.1	3.5	0.1	2.4
0.1	4.2	0.1	2.5	0.2	3.1	0.2	3.2	0.3	2.1	0.1	1.9	0.1	3.6	0.1	2.6
0.1	4.5	0.1	2.7	0.2	3.2	0.3	3.5	0.3	2.3	0.1	2.0	0.1	3.9	0.1	2.9
0.1	4.9	0.2	2.9	0.2	3.5	0.3	3.6	0.3	2.4	0.1	2.1	0.1	4.0	0.1	3.0
0.1	5.3	0.2	3.1	0.2	3.7	0.3	3.8	0.3	2.5	0.1	2.3	0.2	4.4	0.1	3.3
0.2	5.5	0.2	3.3	0.3	4.1	0.3	4.0	0.3	2.6	0.1	2.5	0.2	4.4	0.1	3.6
0.2	5.8	0.2	3.4	0.3	4.4	0.3	4.4	0.3	2.8	0.2	2.6	0.2	4.6	0.1	3.8
0.2	5.8	0.2	3.7	0.3	4.7	0.4	4.5	0.4	2.9	0.2	2.7	0.2	4.9	0.1	4.1
0.2	6.1	0.2	3.7	0.3	4.8	0.4	4.8	0.4	3.1	0.2	2.8	0.2	5.1	0.1	4.3
0.2	6.2	0.2	3.9	0.4	5.1	0.4	4.9	0.4	3.3	0.2	3.0	0.2	5.2	0.1	4.5
0.2	6.4	0.3	4.0	0.4	5.3	0.4	5.1	0.4	3.5	0.2	3.1	0.2	5.4	0.1	4.7
0.2	6.6	0.3	4.2	0.4	5.6	0.5	5.3	0.4	3.7	0.2	3.3	0.2	5.5	0.1	4.8
0.2	6.6	0.3	4.4	0.4	5.7	0.5	5.3	0.4	3.9	0.2	3.5	0.3	5.8	0.1	5.0
0.3	6.8	0.3	4.4	0.4	5.9	0.5	5.4	0.5	4.1	0.3	3.7	0.3	6.1	0.1	5.2
0.3	7.2	0.4	4.6	0.4	6.2	0.5	5.6	0.5	4.1	0.3	3.7	0.3	6.4	0.1	5.3
0.3	7.4	0.4	4.6	0.5	6.4	0.5	5.8	0.5	4.2	0.3	3.8	0.3	6.5	0.1	5.5
0.4	7.7	0.4	4.6	0.5	6.5	0.5	5.9	0.5	4.4	0.3	3.9	0.3	6.7	0.1	5.7

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0.4	7.8	0.5	4.6	0.5	6.7	0.6	6.2	0.5	4.7	0.3	4.0	0.4	7.1	0.1	5.9
0.4	8.2	0.5	4.7	0.5	6.9	0.6	6.5	0.5	4.8	0.3	4.1	0.4	7.2	0.1	6.0
0.5	8.3	0.6	4.8	0.5	7.1	0.6	6.7	0.6	5.0	0.3	4.1	0.4	7.6	0.1	6.2
0.5	8.4	0.6	4.8	0.6	7.2	0.7	7.0	0.6	5.1	0.3	4.3	0.4	7.6	0.1	6.3
0.5	8.5	0.6	4.9	0.6	7.5	0.7	7.3	0.6	5.3	0.3	4.4	0.4	7.9	0.1	6.5
0.6	8.5	0.7	5.0	0.6	7.7	0.7	7.5	0.6	5.5	0.3	4.5	0.5	8.3	0.1	6.6
0.7	8.6	0.7	5.1	0.6	7.8	0.8	7.8	0.6	5.7	0.3	4.6	0.5	8.8	0.1	6.7
0.7	8.7	0.7	5.2	0.7	8.1	0.8	8.0	0.7	6.0	0.3	4.8	0.5	9.0	0.1	6.7
0.7	8.9	0.8	5.4	0.7	8.2	0.8	8.2	0.7	6.3	0.3	5.0	0.6	9.2	0.1	7.0
0.8	9.0	0.8	5.6	0.7	8.5	0.9	8.4	0.7	6.3	0.4	5.1	0.6	9.3	0.2	7.2
0.8	9.1	0.8	5.9	0.7	8.7	0.9	8.7	0.8	6.7	0.4	5.2	0.6	9.5	0.2	7.5
0.8	9.2	0.9	6.0	0.8	9.0	0.9	8.8	0.8	6.8	0.4	5.3	0.6	9.6	0.2	7.6
0.8	9.3	0.9	6.2	0.8	9.4	1.0	8.9	0.8	7.0	0.4	5.3	0.7	10.1	0.2	7.8
0.9	9.5	0.9	6.3	0.8	9.6	1.0	9.1	0.8	7.2	0.4	5.5	0.7	10.4	0.2	7.9
0.9	9.6	1.0	6.5	0.9	9.6	1.0	9.4	0.8	7.4	0.4	5.5	0.7	10.6	0.2	7.9
1.0	9.7	1.1	6.6	0.9	9.7	1.0	9.4	0.8	7.5	0.4	5.7	0.7	10.7	0.2	8.2
1.0	9.9	1.1	6.7	0.9	9.9	1.1	9.8	0.9	7.7	0.4	5.7	0.7	10.8	0.2	8.3
1.1	10.1	1.2	6.8	0.9	10.1	1.1	9.9	0.9	7.8	0.4	5.8	0.8	11.1	0.2	8.4
1.2	10.3	1.2	7.0	0.9	10.2	1.1	9.9	0.9	8.0	0.4	5.9	0.8	11.3	0.3	8.7
1.2	10.4	1.2	7.1	1.0	10.4	1.1	10.2	0.9	8.1	0.4	5.9	0.8	11.4	0.3	8.8
1.2	10.6	1.3	7.2	1.0	10.5	1.2	10.3	1.0	8.1	0.4	6.2	0.9	11.5	0.3	8.9
1.3	10.7	1.3	7.2	1.0	10.6	1.2	10.6	1.0	8.3	0.4	6.2	0.9	11.6	0.3	8.9
1.3	10.7	1.4	7.3	1.0	10.9	1.2	10.8	1.0	8.4	0.4	6.2	0.9	11.8	0.4	9.0
1.3	10.7	1.4	7.4	1.1	11.0	1.3	11.1	1.0	8.5	0.4	6.2	0.9	11.9	0.4	9.2
1.4	10.8	1.4	7.5	1.1	11.2	1.3	11.2	1.0	8.7	0.5	6.4	0.9	12.0	0.4	9.2
1.5	11.0	1.5	7.5	1.1	11.4	1.4	11.5	1.1	8.8	0.5	6.4	0.9	12.0	0.5	9.5
1.5	11.2	1.5	7.6	1.1	11.5	1.4	11.7	1.1	8.9	0.5	6.5	0.9	12.1	0.5	9.6
1.6	11.2	1.6	7.8	1.2	11.7	1.4	11.8	1.1	9.0	0.5	6.6	1.0	12.2	0.5	9.7
1.6	11.3	1.6	7.9	1.2	11.8	1.5	12.0	1.2	9.2	0.5	6.7	1.0	12.4	0.5	9.9
1.7	11.4	1.7	8.1	1.3	12.0	1.5	12.1	1.2	9.3	0.5	6.8	1.0	12.6	0.5	10.1
1.7	11.4	1.7	8.1	1.3	12.2	1.5	12.3	1.2	9.4	0.5	6.9	1.0	12.6	0.5	10.1
1.8	11.6	1.7	8.3	1.3	12.5	1.6	12.5	1.2	9.5	0.5	7.0	1.0	12.7	0.6	10.4
1.8	11.7	1.8	8.5	1.4	12.5	1.6	12.7	1.3	9.6	0.5	7.1	1.1	12.9	0.6	10.4
1.9	11.9	1.9	8.6	1.4	12.7	1.6	12.8	1.3	9.6	0.5	7.2	1.1	13.0	0.6	10.5
1.9	11.9	1.9	8.7	1.4	12.9	1.6	12.8	1.3	9.8	0.6	7.2	1.1	13.2	0.6	10.6
2.0	12.0	2.0	8.8	1.5	13.1	1.7	12.9	1.3	9.9	0.6	7.4	1.2	13.4	0.6	10.8
2.1	12.2	2.0	9.0	1.5	13.3	1.7	13.1	1.4	9.9	0.6	7.4	1.2	13.5	0.6	10.8
2.1	12.2	2.1	9.2	1.6	13.6	1.7	13.4	1.4	10.1	0.6	7.6	1.3	13.7	0.6	10.9
2.2	12.3	2.1	9.3	1.6	13.8	1.8	13.5	1.4	10.3	0.7	7.8	1.3	13.9	0.7	11.1
2.2	12.4	2.2	9.4	1.6	13.8	1.8	13.7	1.5	10.4	0.7	7.9	1.3	13.9	0.7	11.2
2.3	12.6	2.2	9.6	1.7	13.9	1.8	13.7	1.5	10.4	0.7	8.0	1.3	14.0	0.7	11.3
2.3	12.6	2.3	9.8	1.7	14.0	1.9	13.7	1.5	10.6	0.7	8.1	1.3	14.1	0.7	11.5
2.4	12.6	2.4	9.8	1.7	14.2	1.9	13.9	1.5	10.7	0.7	8.2	1.4	14.2	0.7	11.7

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2.4	12.8	2.4	9.9	1.8	14.3	1.9	13.9	1.6	10.7	0.7	8.3	1.4	14.2	0.8	11.8
2.5	12.9	2.5	10.1	1.8	14.4	2.0	14.1	1.6	10.7	0.7	8.4	1.4	14.4	0.8	11.8
2.5	12.9	2.5	10.3	1.9	14.5	2.0	14.2	1.6	10.9	0.7	8.5	1.4	14.5	0.8	12.0
2.6	13.1	2.6	10.5	1.9	14.5	2.0	14.4	1.6	11.1	0.8	8.5	1.5	14.5	0.8	12.1
2.6	13.1	2.7	10.7	1.9	14.7	2.1	14.4	1.7	11.1	0.8	8.7	1.5	14.5	0.8	12.2
2.7	13.3	2.7	10.7	2.0	14.9	2.1	14.5	1.7	11.2	0.8	8.8	1.5	14.6	0.9	12.3
2.8	13.4	2.8	10.9	2.0	14.9	2.1	14.5	1.7	11.2	0.8	8.9	1.5	14.7	0.9	12.3
2.9	13.7	2.8	11.0	2.0	15.0	2.2	14.6	1.7	11.2	0.8	9.0	1.6	14.7	0.9	12.4
2.9	13.7	2.9	11.1	2.1	15.0	2.2	14.7	1.8	11.3	0.8	9.1	1.6	14.8	0.9	12.5
3.0	13.9	2.9	11.1	2.1	15.1	2.3	14.7	1.8	11.3	0.9	9.3	1.6	14.8	0.9	12.7
3.0	13.9	3.0	11.2	2.1	15.1	2.3	14.6	1.8	11.3	0.9	9.4			0.9	12.8
3.1	14.1	3.0	11.2	2.2	15.1	2.4	14.6	1.9	11.4	0.9	9.6			1.0	12.8
3.2	14.3	3.1	11.3	2.2	15.1	2.4	14.5	1.9	11.5	0.9	9.7			1.0	12.8
3.3	14.3	3.1	11.4	2.3	15.2	2.4	14.4	1.9	11.5	1.0	9.8			1.0	13.0
3.3	14.4	3.2	11.6	2.3	15.2	2.5	14.3	1.9	11.5	1.0	9.9				
3.4	14.4	3.3	11.7	2.3	15.2	2.5	14.1	2.0	11.6	1.0	10.0				
3.4	14.4	3.4	11.8	2.4	15.2	2.5	13.9	2.0	11.6	1.0	10.1				
3.5	14.4	3.4	11.9	2.4	15.2	2.6	13.7	2.0	11.6						
3.5	14.5	3.5	11.9	2.4	15.1	2.6	13.7	2.0	11.6						
3.6	14.5	3.5	11.9	2.5	15.0	2.6	13.5	2.0	11.7						
3.7	14.6	3.6	12.0	2.5	15.0	2.6	13.4	2.1	11.7						
3.7	14.6	3.6	12.1	2.6	14.9			2.1	11.7						
3.7	14.6	3.6	12.1	2.6	14.9			2.1	11.7						
3.8	14.7	3.7	12.1	2.6	14.8			2.1	11.8						
3.9	14.8	3.7	12.2	2.7	14.8			2.2	11.8						
3.9	14.9	3.8	12.3	2.7	14.7										
4.0	14.9	3.8	12.4	2.7	14.6										
4.0	14.9	3.9	12.5	2.7	14.6										
4.1	15.1	3.9	12.5	2.8	14.6										
4.2	15.2	4.0	12.6												
4.3	15.2	4.0	12.7												
4.3	15.4	4.1	12.7												
4.4	15.4	4.2	12.7												
4.5	15.4	4.2	12.7												
4.5	15.4	4.2	12.8												
4.6	15.4	4.3	12.9												
4.7	15.5	4.3	12.9												
4.7	15.5	4.3	13.0												
4.8	15.5	4.4	13.0												
4.8	15.5	4.4	13.0												
4.9	15.5	4.5	13.0												
5.0	15.6	4.6	13.0												
5.0	15.6	4.6	13.0												

Here, s – Slip, τ – Bond stress, 8-1 indicates specimen ID, 8 stands for bar diameter and 1 is for specimen number