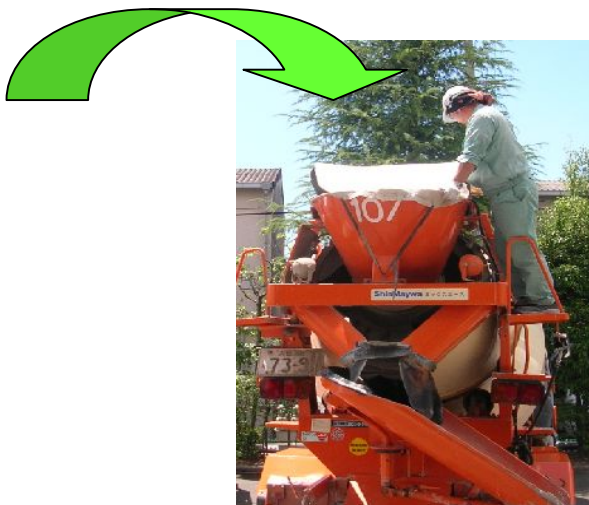
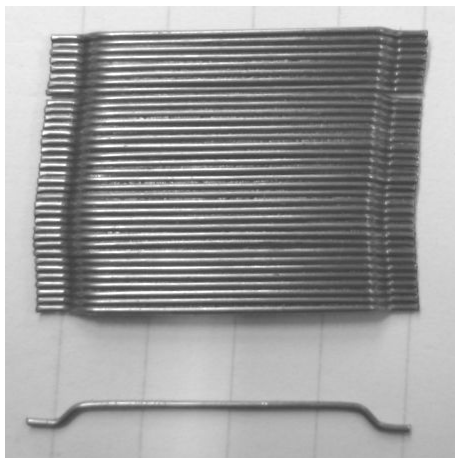


✕ 押抜きせん断実験



Hooked-ends type steel fiber

$L = 30 \text{ mm}$, $\phi = 0.62 \text{ mm}$

$f_y = 1119 \text{ N/mm}^2$, $f_u = 1215 \text{ N/mm}^2$

Plain concrete

Slump: 150 mm, $G_{\max}$: 20 mm

Mix No.	Unit weight (kg/m^3)					
	Water	Cement	Fine aggregates		Coarse aggregates	
			Mixed sand	Crushed sand	Crushed gravel	Lime stone
1	183	321	477	317	696	301
2	183	345	466	310	696	301

Slabs	Thickness (mm)	Effective depth (mm)	Reinforcement ratio (%)	Fiber volume fraction (%)	Maximum load (kN)
t100-0.67	100	70	0.85	0.67	137.5
t140-0.67	140	110	0.54	0.67	210.2
t180-0.67	180	150	0.40	0.67	297.6
t100-0.72	100	65	0.91	0.72	140.8
t140-0.72	140	105	0.57	0.72	213.2
t180-0.72	180	145	0.41	0.72	290.7
t100-0.91	100	65	0.91	0.91	120.8
t140-0.91	140	105	0.57	0.91	183.1
t180-0.91	180	145	0.41	0.91	231.2
t100-0.63	100	70	0.85	0.63	152.3
t100-0.94	100	70	0.85	0.94	147.9
t100-1.03	100	70	0.85	1.03	158.9



✕ 押抜きせん断耐荷力式の提案

$$V_u = \beta_d \beta_p \beta_r (f_{pcd} + f_b) u_p d$$

$$f_{pcd} = 0.2 \sqrt{f'_c}$$

$$\beta_d = \sqrt[4]{\frac{1000}{d}}$$

$$\beta_p = \sqrt[3]{100p}$$

$$\beta_r = 1 + \frac{1}{1 + 0.25u/d}$$

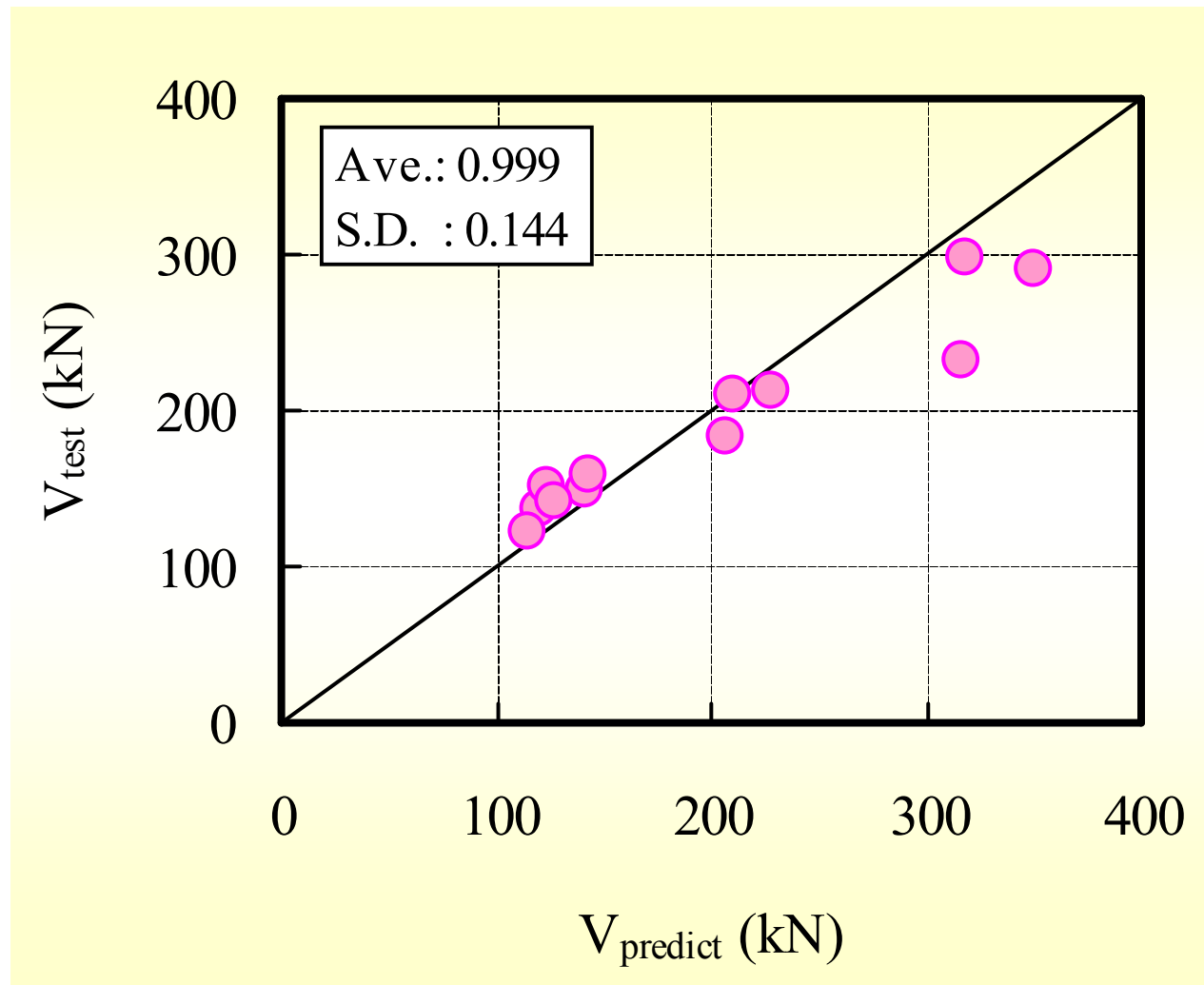
$$f_b = 0.41 \tau F$$

$$F = \frac{L}{D} V_f d_f$$

$$u_p = (u + \pi d)(1 - KF)$$

付着強度 $\tau = 4.15 \text{ N/mm}^2$

Voo & Foster式でも検討



$$u_p = (u + \pi d)(1 - KF)$$

$$K = 0.32$$

