

Sound transmission loss

Glass combination		Ts(JIS A 4706)		1 octave TL (dB)						1/3 octave TL (dB)															fc (Hz)	frmd (Hz)					
		avg	1/3 octave	1 octave	125Hz	250	500	1000	2000	4000	100Hz	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000			2500	3150	4000	5000	
single pane	FL3	25	Ts-25	Ts-25	15.3	19.5	25.3	29.8	33.0	25.6	14.7	14.5	17.3	17.6	20.2	21.7	23.8	25.6	27.2	28.7	30.0	31.1	32.5	33.4	33.2	30.5	23.0	26.4	4000		
	FL4	26	Ts-25	Ts-25	18.1	22.0	27.4	31.8	31.0	25.8	18.0	17.1	19.4	20.7	21.9	23.8	25.9	27.7	29.2	30.7	32.1	33.0	33.8	33.7	28.1	22.8	27.4	30.9	3000		
	FL5	27	Ts-25	Ts-30	19.1	23.7	29.0	33.4	28.1	30.7	18.2	18.7	20.7	22.2	24.2	25.2	27.4	29.5	31.0	32.4	33.7	34.3	34.3	34.3	31.1	24.6	28.4	31.2	34.4	2400	
	FL6	28	Ts-25	Ts-30	19.0	25.0	30.6	34.2	28.6	34.2	17.7	18.5	22.0	23.2	25.7	27.1	29.1	30.9	32.4	33.7	34.3	34.7	32.2	26.8	28.3	32.0	34.8	37.3	2000		
	PW6.8	29	Ts-30	Ts-30	20.5	25.4	31.6	34.5	29.4	36.7	20.7	18.9	22.8	23.2	26.5	28.0	30.0	32.0	33.4	34.5	35.3	33.9	30.0	27.4	31.9	34.7	36.9	39.9	1765		
	FL8	29	Ts-30	Ts-30	21.2	25.7	32.2	33.2	31.2	39.5	20.7	20.9	22.0	23.9	25.9	28.2	30.7	32.5	34.1	35.5	35.1	30.7	29.3	31.0	34.9	37.8	39.7	42.2	1500		
	FL10	31	Ts-30	Ts-35	23.7	27.6	33.8	32.7	34.6	43.0	23.9	22.5	25.1	25.9	28.3	29.5	32.1	34.3	35.7	35.2	32.4	31.4	31.7	36.2	38.9	41.2	43.6	44.9	1200		
	FL12	33	Ts-35	Ts-35	24.9	29.6	34.8	33.7	38.4	45.5	24.0	24.7	26.4	27.7	30.1	32.0	33.5	35.4	35.9	35.0	33.6	32.9	36.0	39.2	41.9	44.0	45.9	47.0	1000		
	FL15	34	Ts-35	Ts-35	25.2	30.6	35.6	34.2	42.0	48.8	23.5	25.4	27.6	28.8	31.0	32.9	34.6	35.9	36.6	33.9	33.1	36.1	39.9	42.7	45.0	47.5	48.9	50.5	800		
FL19	35	Ts-35	Ts-35	26.7	31.2	35.1	36.2	46.2	51.1	25.5	26.7	28.2	29.3	31.8	33.6	35.3	36.5	34.0	33.7	36.7	40.6	44.3	46.8	48.6	50.2	51.7	51.4	632			
Laminated	L6	28	Ts-30	Ts-30	19.6	24.4	30.4	34.6	32.3	37.7	19.0	19.2	20.7	22.7	24.5	26.8	28.9	30.5	32.4	33.9	34.6	35.3	34.8	32.4	30.6	35.0	38.7	42.1	2000		
	L8	30	Ts-30	Ts-30	22.5	26.1	32.1	34.8	33.5	42.8	22.9	22.2	22.4	25.3	25.6	27.9	30.4	32.4	34.6	35.9	35.7	33.4	32.4	32.5	37.1	40.6	43.1	46.5	1500		
	L10	32	Ts-30	Ts-35	25.2	27.9	33.4	34.6	35.7	45.7	26.8	23.4	26.2	26.4	28.5	29.4	31.9	33.4	35.5	35.9	34.6	33.6	33.2	36.2	40.5	43.5	46.2	49.1	1200		
	L12	33	Ts-35	Ts-35	26.4	29.5	34.9	34.9	38.7	48.0	26.2	25.7	27.4	27.9	29.6	31.7	33.7	35.2	36.3	36.1	34.7	34.2	36.1	39.7	43.1	46.0	48.4	50.8	1000		
	L16	35	Ts-35	Ts-35	27.1	31.1	35.3	35.4	43.7	51.0	26.0	26.7	29.1	30.0	31.1	32.6	34.4	35.4	36.2	34.7	34.7	37.3	41.5	44.3	46.8	49.4	51.3	53.2	750		
	L6(low temp)	28	Ts-30	Ts-30	19.7	24.7	30.4	34.0	28.9	36.0	19.3	18.5	21.8	22.6	25.7	27.2	28.8	30.9	32.3	33.5	34.2	34.3	31.0	27.0	29.8	33.5	36.8	40.1	2000		
	L6(high temp)	30	Ts-30	Ts-30	20.4	25.2	30.9	35.4	36.2	37.8	20.2	19.2	22.3	23.5	25.7	27.3	29.5	31.0	32.8	34.6	35.3	36.4	37.0	36.7	35.1	35.4	38.3	41.8	2000		
	L12(low temp)	33	Ts-30	Ts-35	24.7	29.8	34.5	33.5	38.6	47.0	22.9	24.8	27.5	28.1	30.3	31.9	33.4	35.1	35.3	34.6	33.2	32.8	36.0	39.6	42.5	45.1	47.6	49.5	1000		
L12(high temp)	34	Ts-35	Ts-35	26.0	29.5	36.0	38.5	40.7	48.8	26.2	25.0	26.9	27.7	29.8	32.0	34.5	36.3	37.8	38.4	38.5	38.5	38.8	40.6	44.1	46.8	48.9	52.2	1000			
IGU	FL3+A6+FL3	25	Ts-20	Ts-20	19.3	21.0	19.8	28.1	37.0	32.6	20.0	18.5	19.4	20.1	21.3	21.7	18.5	19.2	22.6	25.8	28.9	31.6	34.9	37.2	40.6	40.4	31.9	30.4	4000	400	
	FL3+A12+FL3	27	Ts-20	Ts-20	18.6	17.1	21.7	32.7	42.4	33.9	19.4	17.2	19.5	17.9	16.8	16.6	19.1	22.4	26.1	30.1	33.7	36.8	40.4	43.4	44.3	41.6	31.2	34.1	4000	280	
	FL3+A6+FL5	28	Ts-25	Ts-25	22.2	23.0	24.2	32.2	36.4	39.4	22.3	21.4	23.1	23.5	23.8	22.0	22.1	24.4	27.7	30.3	32.5	35.0	36.4	37.5	35.5	38.4	39.3	41.0	4000, 2400	360	
	FL3+A12+FL5	29	Ts-25	Ts-25	20.4	18.6	26.3	37.6	42.1	42.7	20.9	19.5	20.9	18.7	17.5	20.0	23.3	27.9	31.8	35.2	38.4	41.2	42.5	43.4	40.8	42.8	41.9	43.7	4000, 2400	250	
	FL3+A6+FL6	29	Ts-25	Ts-25	22.0	23.2	26.0	33.8	37.1	42.7	21.7	21.6	22.9	23.7	23.6	22.3	24.0	26.3	28.9	32.2	34.2	35.6	36.6	36.3	38.8	42.4	42.4	43.2	4000, 2000	350	
	FL4+A6+FL4	27	Ts-20	Ts-25	21.0	21.3	22.2	32.1	36.9	32.8	22.3	19.6	21.4	23.0	22.0	19.7	19.6	23.2	26.5	30.2	32.3	35.3	37.1	38.1	35.7	29.7	33.9	40.8	3000	350	
	FL4+A6+FL6	29	Ts-25	Ts-25	22.6	23.3	26.0	35.7	36.5	38.8	22.3	22.0	23.6	24.5	23.1	22.5	23.7	26.2	30.2	33.8	36.3	38.2	38.0	37.0	35.1	36.0	39.5	45.2	3000, 2000	320	
	FL4+A12+FL6	31	Ts-25	Ts-25	21.0	21.5	28.0	39.8	40.7	42.0	21.7	20.1	21.5	20.1	21.2	24.0	25.8	28.0	32.4	37.5	40.8	42.8	42.6	41.3	38.9	39.1	42.9	48.8	3000, 2000	220	
	FL4+A6+FL8	31	Ts-30	Ts-30	22.8	23.1	29.3	36.6	39.1	42.6	25.2	20.8	23.7	24.2	22.0	23.4	26.8	30.0	33.3	36.2	37.5	36.1	37.3	39.4	41.8	40.5	42.2	47.9	3000, 1500	300	
	FL5+A6+FL5	28	Ts-25	Ts-25	22.2	21.4	24.7	33.8	33.5	37.1	22.5	21.8	22.3	23.4	22.0	19.7	22.3	25.0	29.1	32.3	34.0	36.0	36.8	35.6	30.7	34.0	38.4	43.4	2400	310	
	FL5+A12+FL5	28	Ts-25	Ts-25	20.2	17.6	27.6	37.2	36.6	40.4	21.1	20.4	19.3	17.1	15.9	21.5	25.0	28.4	31.8	35.2	38.0	39.7	40.0	38.4	33.8	37.1	42.2	47.5	2400	220	
	FL5+A12+PW6.8	31	Ts-30	Ts-30	20.0	22.1	33.1	40.8	37.7	43.0	21.7	19.0	19.7	20.8	21.0	26.2	31.2	33.1	36.3	39.6	41.1	42.2	39.7	38.3	35.9	40.0	44.3	49.4	2400, 1765	200	
	FL5+A6+FL8	30	Ts-30	Ts-30	24.0	24.8	28.5	36.3	36.9	42.6	25.9	22.6	24.0	24.6	25.2	24.5	26.8	28.1	32.1	35.9	37.5	35.6	35.8	36.9	38.3	40.2	43.0	47.4	2400, 1500	280	
	FL5+A6+FL10	32	Ts-30	Ts-30	25.4	25.9	30.5	35.8	39.4	44.1	26.4	24.6	25.5	26.6	26.5	24.8	28.4	30.5	34.5	36.2	35.5	35.7	37.6	41.0	40.4	41.5	44.7	49.3	2400, 1200	270	
	FL6+A6+FL6	28	Ts-25	Ts-25	22.6	21.9	26.5	35.3	34.0	41.5	22.4	22.0	23.5	22.7	20.9	22.4	23.9	27.4	30.6	34.2	36.0	35.8	35.3	33.0	34.0	38.6	42.4	47.4	2000	280	
	FL6+A12+FL10	33	Ts-35	Ts-35	23.1	27.0	34.8	40.2	39.8	46.5	24.9	21.6	23.4	24.5	28.7	29.5	33.3	34.5	37.7	40.4	40.3	39.9	39.9	39.6	39.9	43.7	47.5	51.3	2000, 1200	180	
FL6+A6+FL12	33	Ts-30	Ts-30	26.6	26.4	31.2	38.3	39.3	46.9	27.5	25.8	26.6	26.1	25.6	27.6	28.8	31.6	35.6	38.2	39.5	37.5	39.0	38.5	40.8	44.2	47.5	52.6	2000, 1000	240		
FL6+A12+FL12	33	Ts-35	Ts-35	22.7	26.7	34.5	40.0	41.5	46.4	26.3	20.1	24.1	24.8	27.8	28.2	32.2	34.8	38.7	41.1	39.4	39.7	41.6	41.5	41.3	44.0	46.7	50.8	2000, 1000	170		
FL8+A12+FL8	29	Ts-30	Ts-30	19.8	21.9	30.7	36.4	35.3	44.6	23.6	21.1	17.1	19.9	22.1	25.2	28.1	31.9	34.7	37.0	37.4	35.1	34.5	34.5	37.8	42.0	45.4	49.6	1500	170		
FL8+A6+FL12	33	Ts-35	Ts-35	26.2	27.9	35.5	36.3	38.4	49.7	27.8	25.1	26.2	25.8	28.2	31.3	33.7	36.1	37.5	38.3	38.8	33.8	35.5	39.7	43.1	47.1	50.3	54.4	1500, 1000	220		