

Figure: 28 TAC §55.30(g)

EXAMPLES

A. MILD TO MARKED BILATERAL SENSORINEURAL HEARING LOSS

	500 Hz	1000 Hz	2000 Hz	3000 Hz
R EAR	15	25	45	55
L EAR	30	45	60	85

1. TO CALCULATE THE AVERAGE HEARING THRESHOLD LEVEL (HTL)

$$R \text{ EAR} = \frac{15 + 25 + 45 + 55}{4} = \frac{140}{4} = 35 \text{ dB}$$

$$L \text{ EAR} = \frac{30 + 45 + 60 + 85}{4} = \frac{220}{4} = 55 \text{ dB}$$

2. TO CALCULATE MONAURAL IMPAIRMENT

$$R \text{ EAR} - 35 \text{ dB} - 25 \text{ dB} = 10 \text{ dB}; 10 \times 1.5 = 15\%$$

$$L \text{ EAR} - 55 \text{ dB} - 25 \text{ dB} = 30 \text{ dB}; 30 \times 1.5 = 45\%$$

3. TO CALCULATE HEARING HANDICAP

$$\text{SMALLER NUMBER (BETTER EAR)} \quad 15\% \times 5 = 75$$

$$\text{LARGER NUMBER (POORER EAR)} \quad 45\% \times 1 = 45$$

$$\text{TOTAL: } \frac{120}{6} = 20\%$$

THEREFORE, A PERSON WITH THE HEARING THRESHOLD LEVELS

SHOWN IN THE AUDIOGRAM ABOVE WOULD HAVE A 20% HEARING HANDICAP.

B. SLIGHT BILATERAL SENSORINEURAL HEARING LOSS

	500 Hz	1000 Hz	2000 Hz	3000 Hz
R EAR	15	15	20	30
L EAR	20	20	30	40

1. AVERAGE HTL

$$R \text{ EAR} = \frac{15 + 15 + 20 + 30}{4} = \frac{80}{4} = 20 \text{ dB}$$

$$L \text{ EAR} = \frac{20 + 20 + 30 + 40}{4} = \frac{110}{4} = 27.5 \text{ dB}$$

2. MONAURAL IMPAIRMENT

$$R \text{ EAR} = 20 \text{ dB} - 25 \text{ dB} = -5 \text{ dB}; 0 \times 1.5 = 0\%$$

$$L \text{ EAR} = 27.5 \text{ dB} - 25 \text{ dB} = 2.5 \text{ dB}; 2.5 \times 1.5 = 3.75\%$$

3. HEARING HANDICAP

$$\text{SMALLER NUMBER (BETTER EAR)} \quad 0\% \times 5 = 0.00$$

$$\text{LARGER NUMBER (POORER EAR)} \quad 3.75\% \times 1 = 3.75$$

$$\text{TOTAL: } \frac{3.75}{6} = 1\% \text{ (ROUNDED OFF)}$$

THEREFORE, THE HEARING HANDICAP IS 1%.

C. SEVERE TO EXTREME BILATERAL SENSORINEURAL HEARING LOSS

	500 Hz	1000 Hz	2000 Hz	3000 Hz
R EAR	80	90	100	110
L EAR	75	80	90	95

1. AVERAGE HTL

$$R \text{ EAR} = \frac{80 + 90 + 100 + 110}{4} = \frac{380}{4} = 95 \text{ dB (USE 92 dB MAXIMAL VALUE)}$$

$$L \text{ EAR} = \frac{75 + 80 + 90 + 95}{4} = \frac{340}{4} = 85 \text{ dB}$$

2. MONAURAL IMPAIRMENT

$$R \text{ EAR} = 92 \text{ dB (MAXIMUM)} - 25 \text{ dB} = 67 \text{ dB}; 67 \times 1.5 = 100\%$$

$$L \text{ EAR} = 85 \text{ dB} - 25 \text{ dB} = 60 \text{ dB}; 60 \times 1.5 = 90\%$$

3. HEARING HANDICAP

$$\text{SMALLER NUMBER (BETTER EAR)} \quad 90\% \times 5 = 450$$

$$\text{LARGER NUMBER (BETTER EAR)} \quad 100\% \times 1 = 100$$

$$\frac{450}{5} = 90\%$$

THEREFORE, THE HEARING HANDICAP IS 92%.

TABLE 1. TABLE OF MONAURAL HEARING IMPAIRMENT\*

DSHL <sub>r</sub>	%	DSHL <sub>r</sub>	%
100	0.0		
105	1.9	245	54.4
110	3.8	250	56.3
115	5.6	255	58.1
120	7.5	260	60.0
125	9.4	265	61.9
130	11.3	270	63.8
135	13.1	275	65.6
140	15.0	280	67.5
145	16.9	285	69.4
150	18.8	290	71.3
155	20.6	295	73.1
160	22.5	300	75.0
165	24.4	305	76.9
170	26.3	310	78.8
175	28.1	315	80.6
180	30.0	320	82.5
185	31.9	325	84.4
190	33.8	330	86.3
195	35.6	335	88.1
200	37.5	340	90.0
205	39.4	345	90.9
210	41.3	350	93.8
215	43.1	355	95.6
220	45.0	360	97.5
225	46.9	365	99.4
230	48.8	370	100.0
235	50.6	or greater	
240	52.5		

1. FROM THE AUDIOGRAM OR NUMERICAL RECORD OF THE AUDIOMETRIC TEST, FIND THE DECIBEL SUM OF THE HEARING THRESHOLD LEVELS (DSHL) OF 500, 1000, 2000, AND 3000 HERTZ (Hz.).

EXAMPLE:

500	20
1000	25
2000	35
3000	<u>40</u>
TOTAL:	120 DSHL

2. UNDER THE DSHL HEADING, 120 DSHL (COL. 1, LINE 5) = 7.5%.

3. COMPUTATION OF % OF HEARING HANDICAP:

IF THE MONAURAL % FIGURE IS THE SAME FOR BOTH EARS, THAT FIGURE EXPRESSES THE % HEARING HANDICAP. IF THE PERCENTAGE MONAURAL HEARING IMPAIRMENTS ARE NOT THE SAME, APPLY THE FORMULA:

$$\frac{(5 \times \% \text{ [BETTER EAR]} + 1 \times \% \text{ [POORER EAR]})}{6} = \% \text{ HEARING HANDICAP}$$

AUDIOMETERS ARE CALIBRATED TO ANSI-1969 STANDARD REFERENCE LEVELS. † DECIBEL SUM OF THE HEARING THRESHOLD LEVELS AT 500, 1000, 2000 and 3000 HERTZ.