

# VIB: Design and Remedial Measures

Number of participants: 13

**What are the different approaches  
1. presented in the video to reduce  
vibration levels in structures ?**

**0 correct answer**  
out of 12 respondents

CONSTRAINED DAMPING MATERIAL  
RESONANCE MATERIAL DAMPING  
ANTI DUMPING MASS ISOLATION  
SMALL DAMPING ADD CHANGE MATERIAL  
TUNED MASS THE SHAPE OF THE BODY  
DAMPING WITH PENDULUM  
ADD AN ADDITIONAL MASS

**Correct answers**

**high tuning**

**low tuning**

**reshaping**

**adding damping**

## tuned vibration absorber

### vibration isolation

The FRF represented in the figure  
2. corresponds to a structure which has been designed with

**7 correct answers**  
out of 11 respondents

	Low tuning	36%	4 votes
✓	High tuning	64%	7 votes
	added damping	0%	0 votes
	A tuned vibration absorber	0%	0 votes

3. **From the point of view of performance, which of these two solutions (high and low tuning) is best, and why ?**

**0 correct answer**  
out of 6 respondents

Low tuning

High tuning because when we add more dof to the system a resonance frequency can overlap with forcing frequency in the low damping model

Low tuning

Low tuning because the amplitude is lower in the domain of the forcing frequencies

High tuning

High tuning

**Correct answer**

**With low tuning,  $X/X_0$  is always smaller than 1, while for**

**high tuning it is always higher, so the performance is better with low tuning.**

- 4. If high or low-tuning cannot be achieved on a structure, what are the alternatives to lower the level of vibrations ?**

**1 correct answer**  
out of 8 respondents

Mass balancing

Damping

Stiffening

Add damping

Add an absorbing material

Isolations

Add damping

Damping

**Correct answer**

**stiffening**

**5. If the vibration problem is related to resonance, which of these is most efficient to reduce vibration levels ?**

**9 correct answers**  
out of 12 respondents

	Adding stiffness	8%	1 vote
	Adding mass	17%	2 votes
✓	Adding damping	75%	9 votes

**6. If the vibration problem is not related to resonance, which of these is most efficient to reduce vibration levels ?**

**2 correct answers**  
out of 10 respondents

✓	Adding stiffness	50%	5 votes
✓	Adding mass	70%	7 votes
	Adding damping	0%	0 votes

**If one wants to reduce the amount of  
7. dynamic excitation applied to a  
system, the possible solutions are**

**2 correct answers**  
out of 8 respondents

✓	vibration isolation	88%	7 votes
	vibration damping	25%	2 votes
✓	reshaping	63%	5 votes
	high or low tuning	13%	1 vote