

mechanism should be added to the introduced damper to fulfill this condition.

NOMENCLATURE

DOF	degree of freedom	-
d_k	diameter of pipe	mm
t_k	thickness of pipe	mm
m_1	mass of supporting structure	kg
m_2	mass of upper structure (roof)	kg
k_1	elastic stiffness of supporting structure	N/mm
k_2	elastic stiffness of damper	N/mm
c_1	damping value of supporting structure	Ns/mm
c_2	damping value of damper	Ns/mm
x	displacement	mm
	velocity	mm/s
	acceleration	mm/s ²
$f(t)$	load in time function	N
U	length of upper side of damper	mm
L	length of lower side of damper	mm
H	height of damper	mm
W	width of damper	mm
t	thickness of plate's damper	mm
E	modulus of elasticity	N/mm ²
P	static load	N
Greek letters		
θ_0	open angle of roof	degree
ν	poisson ratio	
σ	yield stress	N/mm ²
δ	displacement	mm
ω	natural frequency	rad/s
ξ	damping ratio	

ACKNOWLEDGMENT

The authors gratefully acknowledge for support of 2017 Fundamental Grant Research given by Ministry of Research and Higher Education of Indonesian Government.

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