

Identification for Mooney model: Hardness (65), Damping (Large), V=2

ANSYS

Mooney model

$$W = \sum_{m=1}^N \sum_{n=1}^N C_{mn} (I_1 - 3)^m (I_2 - 3)^n$$

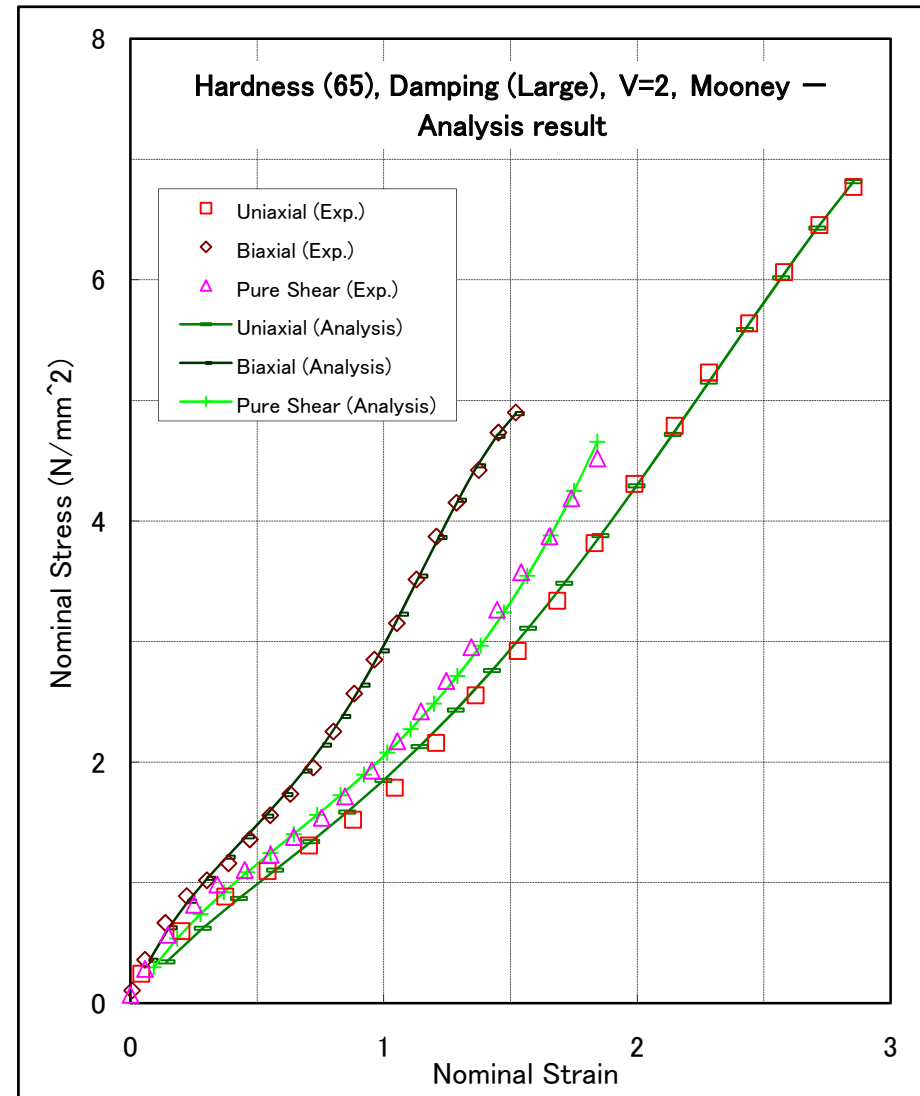
Rate of Loading in Tension Test(s)

2 mm/s

Coefficient

Coefficient	
C10 (C1)	0.4207
C01 (C2)	0.037363
C20 (C3)	0.031085
C11 (C4)	-0.020296
C02 (C5)	0.0030342
C30 (C6)	-0.0018482
C21 (C7)	0.0049359
C12 (C8)	-0.0014495
C03 (C9)	0.00011178
C40 (C10)	0

Input File: ys_nll_v2_ansys_m.dat



**Analysis result:
Stress-strain relationship**

Identification for Mooney model: Hardness (65), Damping (Large), V=20

ANSYS

Mooney model

$$W = \sum_{m=1}^N \sum_{n=1}^N c_{mn} (I_1 - 3)^m (I_2 - 3)^n$$

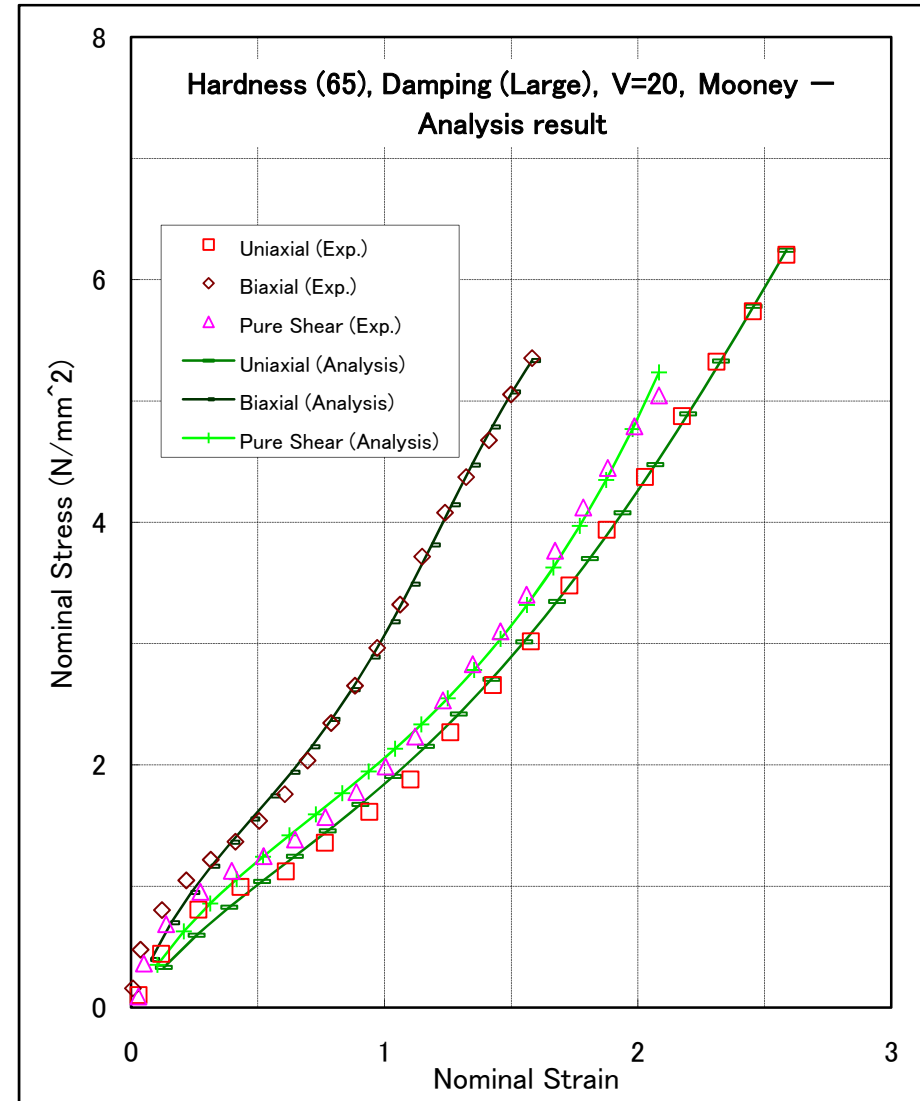
Rate of Loading in Tension Test(s)

20 mm/s

Coefficient

Coefficient	
C10 (C1)	0.40964
C01 (C2)	0.07709
C20 (C3)	0.032401
C11 (C4)	-0.028536
C02 (C5)	0.005422
C30 (C6)	-0.0012804
C21 (C7)	0.0037186
C12 (C8)	-0.0012039
C03 (C9)	9.07E-05
C40 (C10)	0

Input File: ys_nll_v20_ansys_m.dat



Analysis result:
Stress-strain relationship

Identification for Ogden model: Hardness (65), Damping (Large), V=2

ANSYS

Ogden model

$$W = \sum_{i=1}^N \frac{\mu_i}{\alpha_i} (\bar{\lambda}_1^{\alpha_i} + \bar{\lambda}_2^{\alpha_i} + \bar{\lambda}_3^{\alpha_i} - 3) + \sum_{i=1}^N \frac{1}{d_i} (J-1)^{2i}$$

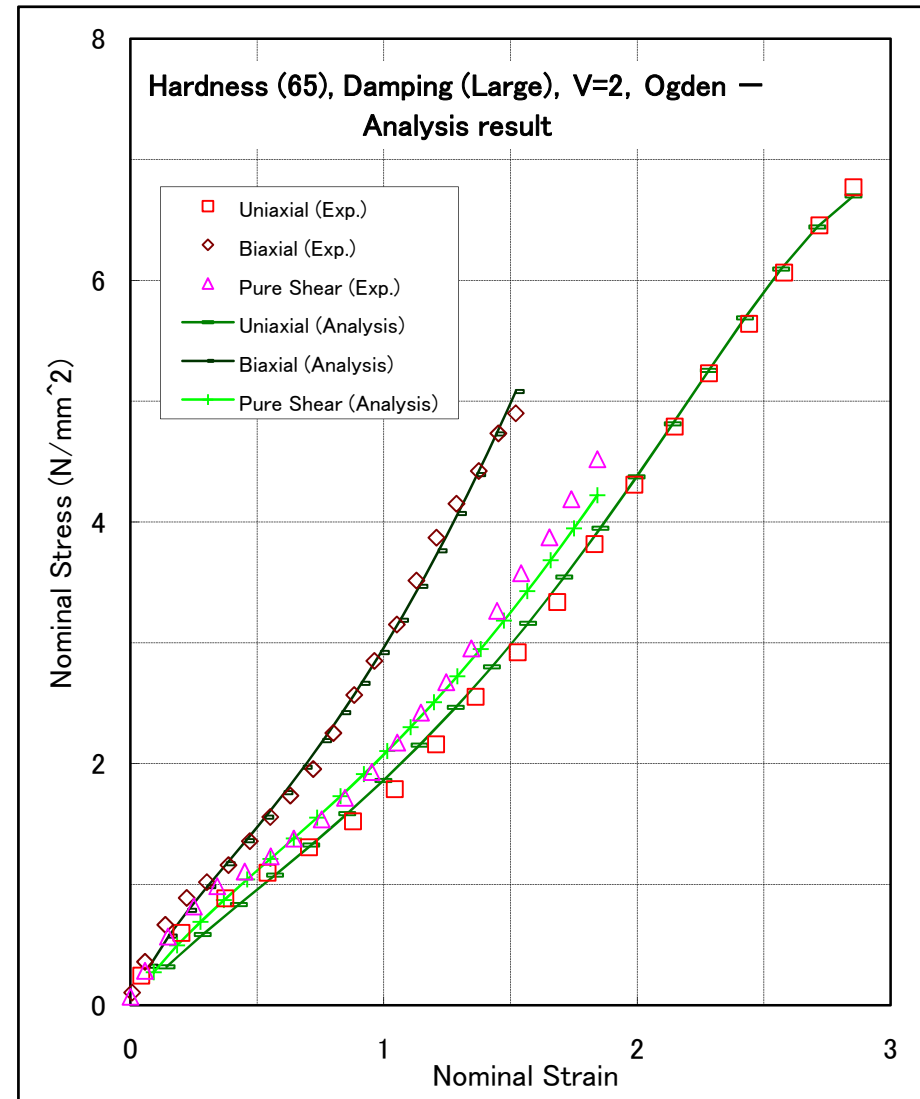
Rate of Loading in Tension Test(s)

2 mm/s

Coefficient

Coefficient		
Order	μ	α
1	-0.21044	-1.7673
2	-0.048216	8.7521
3	0.048522	8.7474
4	0.42941	3.0206

Input File: ys_nll_v2_ansys_og.dat



Analysis result:
Stress-strain relationship

Identification for Ogden model: Hardness (65), Damping (Large), V=20

ANSYS

Ogden model

$$W = \sum_{i=1}^N \frac{\mu_i}{\alpha_i} (\bar{\lambda}_1^{\alpha_i} + \bar{\lambda}_2^{\alpha_i} + \bar{\lambda}_3^{\alpha_i} - 3) + \sum_{i=1}^N \frac{1}{d_i} (J - 1)^{2i}$$

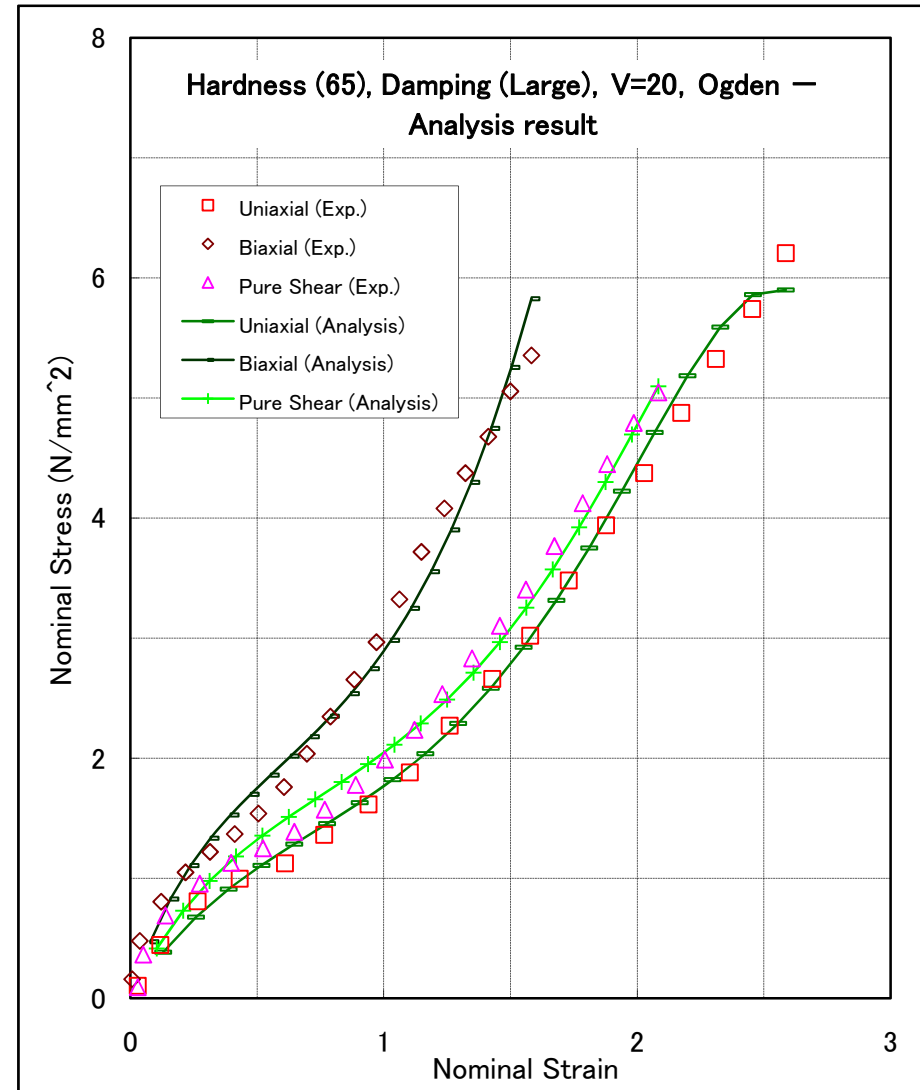
Rate of Loading in Tension Test(s)

20 mm/s

Coefficient

Coefficient		
Order	μ	α
1	-0.62844	8.4677
2	-0.018384	-3.0786
3	0.63179	8.4639
4	2.1506	1.0305

Input File: ys_nll_v20_ansys_og.dat



Analysis result:
Stress-strain relationship