

Identification for Mooney model: Hardness (50), Damping (Large), V=2

ABAQUS

Mooney model

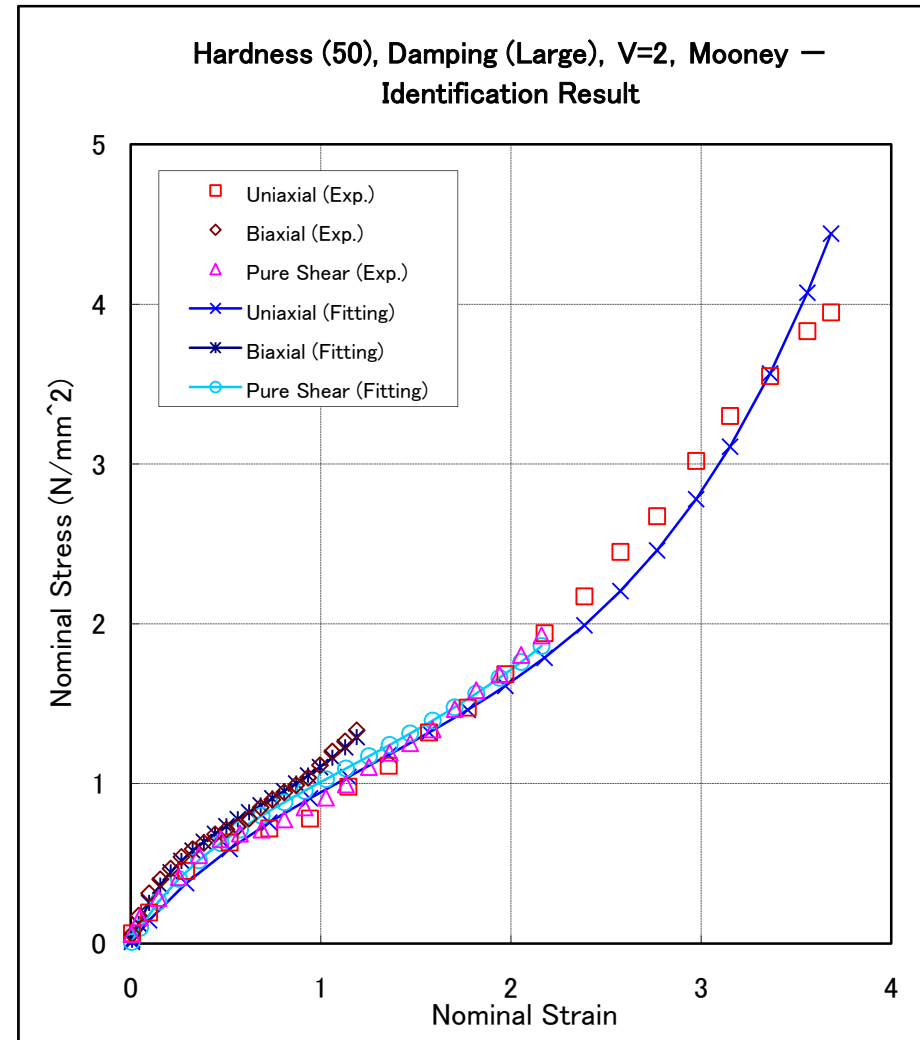
$$W = \sum_{m=1}^N \sum_{n=1}^N C_{mn} (I_1 - 3)^m (I_2 - 3)^n$$

Rate of Loading in Tension Test(s)

2 mm/s

Coefficient

Coefficient	
C10 (C1)	0.276578
C01 (C2)	-0.00392105
C20 (C3)	-0.00218291
C11 (C4)	0.000694844
C02 (C5)	—
C30 (C6)	0.000249030
C21 (C7)	
C12 (C8)	
C03 (C9)	
C40 (C10)	



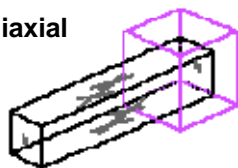
Identification result:
Stress-strain relationship

Analysis with Mooney model: Hardness (50), Damping (Large), V=2

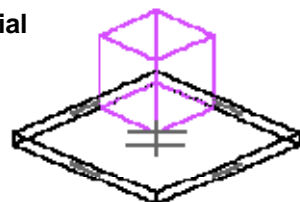
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Input File: ys_nls_v2_abaqus_m.inp

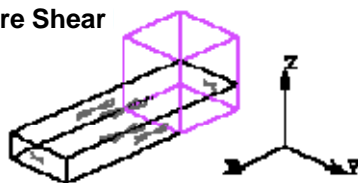
Uniaxial



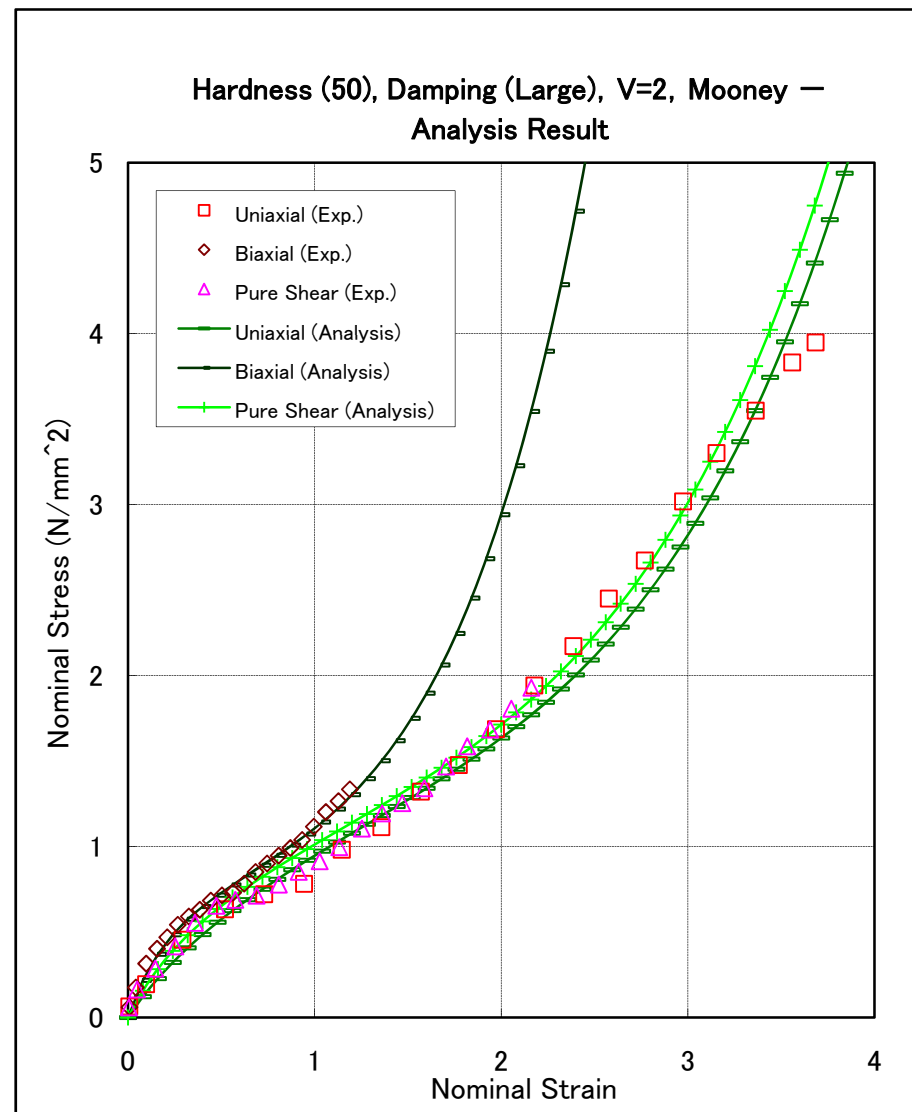
Biaxial



Pure Shear



Analysis model



Analysis result:
Stress-strain relationship

Identification for Mooney model: Hardness (50) Damping (Large), V=20

ABAQUS

Mooney model

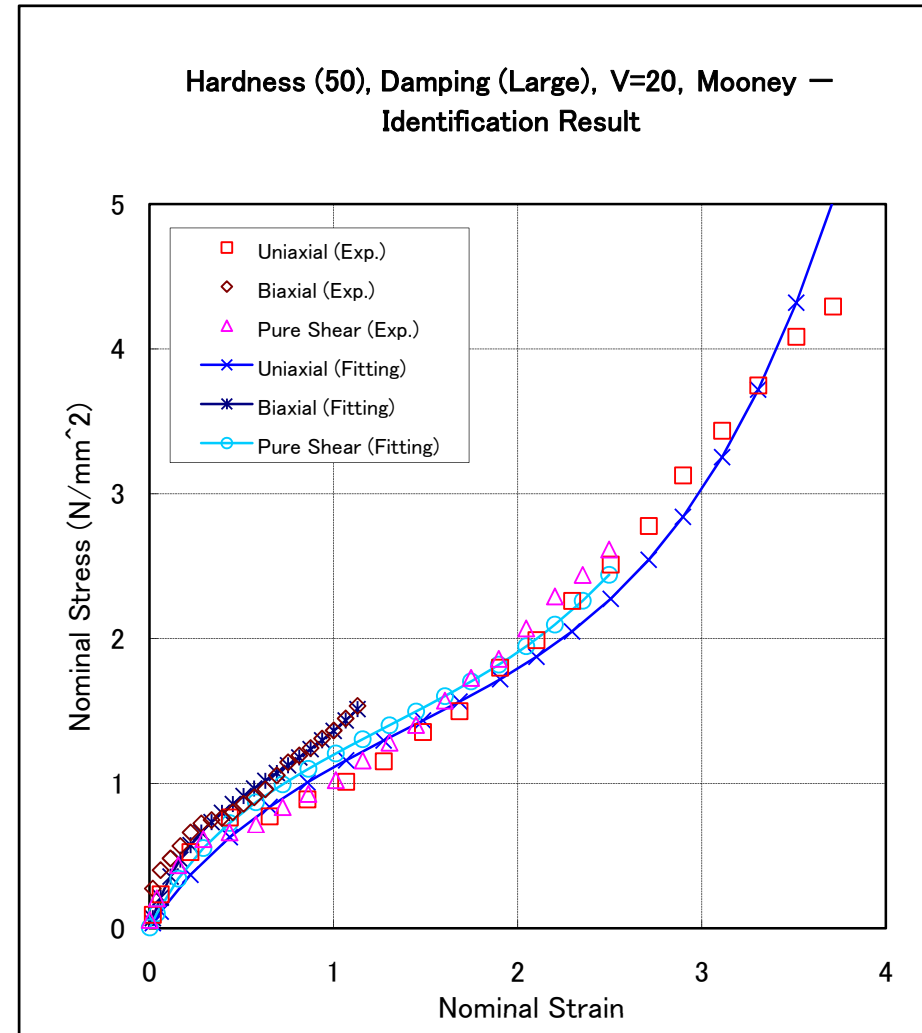
$$W = \sum_{m=1}^N \sum_{n=1}^N C_{mn} (I_1 - 3)^m (I_2 - 3)^n$$

Rate of Loading in Tension Test(s)

20 mm/s

Coefficient

Coefficient	
C10 (C1)	0.332690
C01 (C2)	0.00355234
C20 (C3)	-0.00577693
C11 (C4)	0.000871676
C02 (C5)	
C30 (C6)	0.000364692
C21 (C7)	
C12 (C8)	
C03 (C9)	
C40 (C10)	



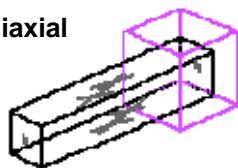
Identification result:
Stress-strain relationship

Analysis with Mooney model: Hardness (50), Damping (Large), V=20

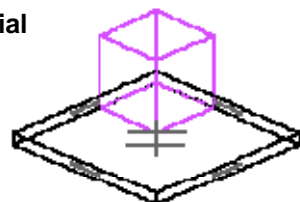
ABAQUS

Input File: ys_nls_v20_abaqus_m.inp

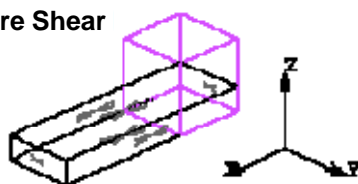
Uniaxial



Biaxial

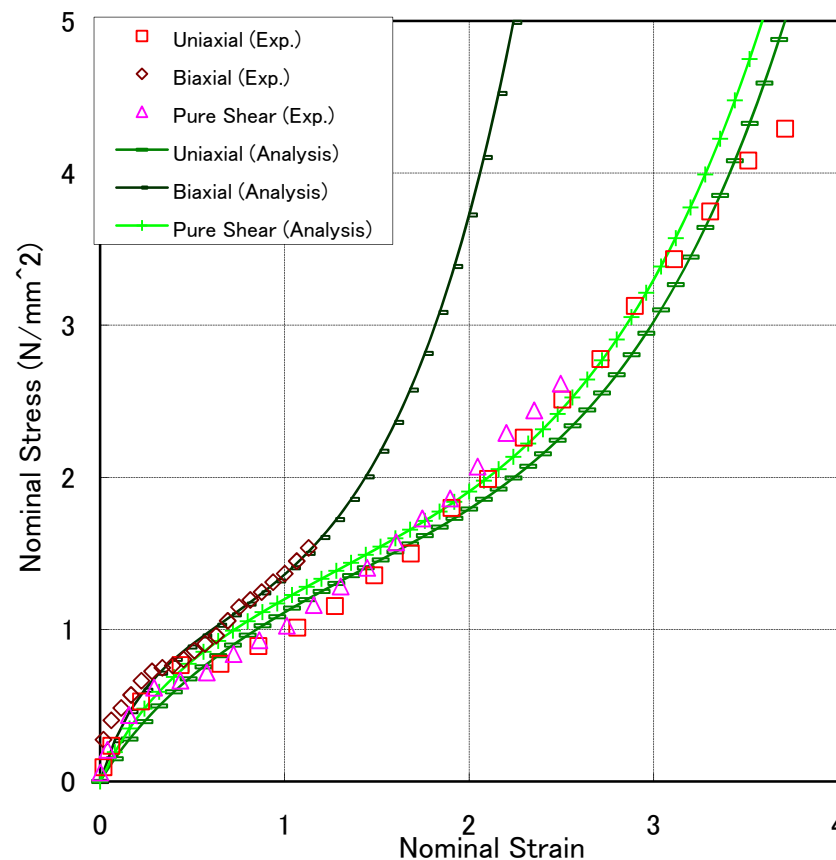


Pure Shear



Analysis model

Hardness (50), Damping (Large), V=20, Mooney —
Analysis Result



Analysis result:
Stress-strain relationship

Identification for Ogden model: Hardness (50), Damping (Large), V=2

ABAQUS

Ogden model

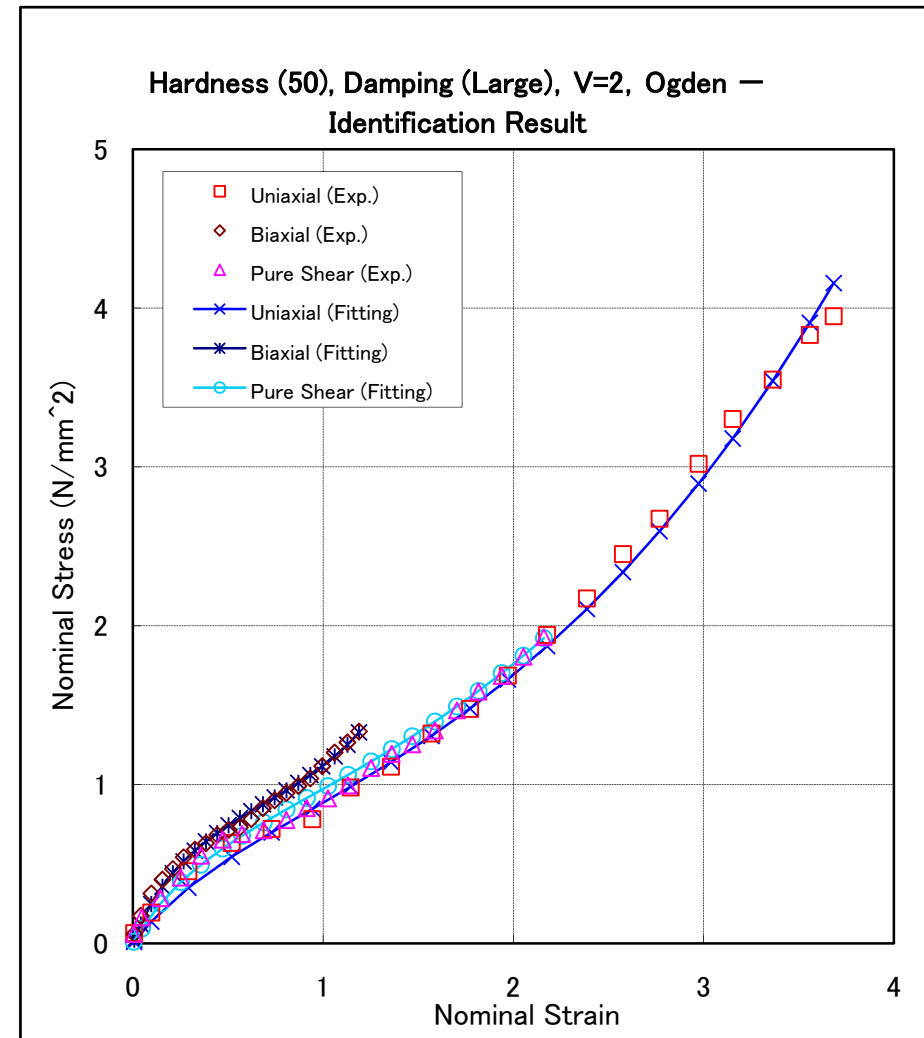
$$W = \sum_{n=1}^N \frac{2\mu_n}{\alpha_n^2} [(\lambda_1^{\alpha_n} + \lambda_2^{\alpha_n} + \lambda_3^{\alpha_n}) - 3]$$

Rate of Loading in Tension Test(s)

2 mm/s

Coefficient

Coefficient		
Oder	μ	α
1	0.0651636	3.58418
2	0.439807	1.22533
3	0.0000500149	1.99542
4	0.0144998	4.38625
5	0.0000499913	0.155531
6	0.000101335	-5.84501



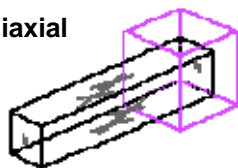
Identification result:
Stress-strain relationship

Analysis with Ogden model: Hardness (50), Damping (Large), V=2

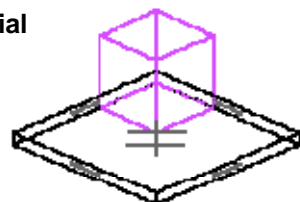
ABAQUS

Input File: ys_nls_v2_abaqus_o.inp

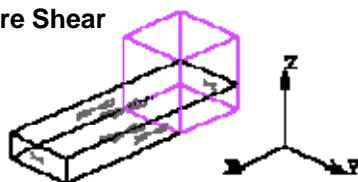
Uniaxial



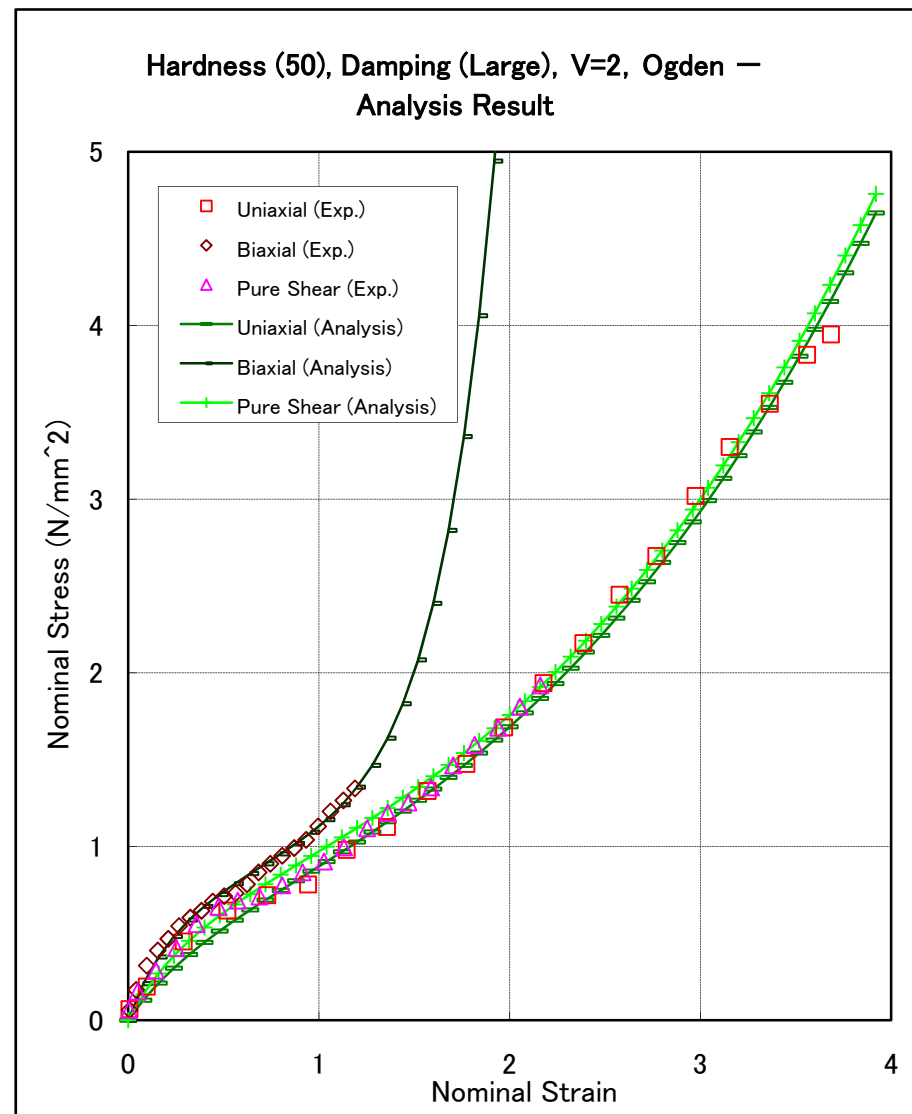
Biaxial



Pure Shear



Analysis model



Analysis result:
Stress-strain relationship

Identification for Ogden model: Hardness (50), Damping (Large), V=20

ABAQUS

Ogden model

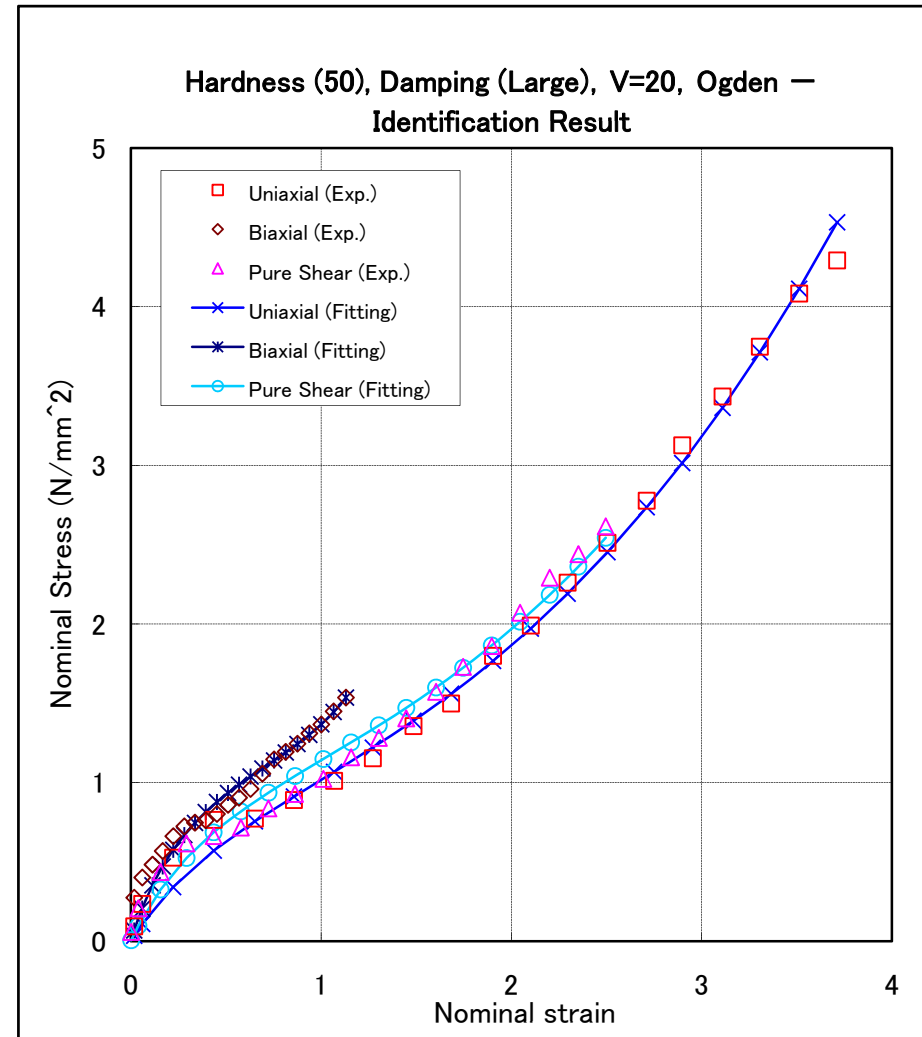
$$W = \sum_{n=1}^N \frac{2\mu_n}{\alpha_n^2} \left[(\lambda_1^{\alpha_n} + \lambda_2^{\alpha_n} + \lambda_3^{\alpha_n}) - 3 \right]$$

Rate of Loading in Tension Test(s)

20 mm/s

Coefficient

Coefficient		
Order	μ	α
1	0.0000727377	1.86219
2	0.0812588	3.85965
3	0.000100909	-6.14972
4	0.558223	0.973271

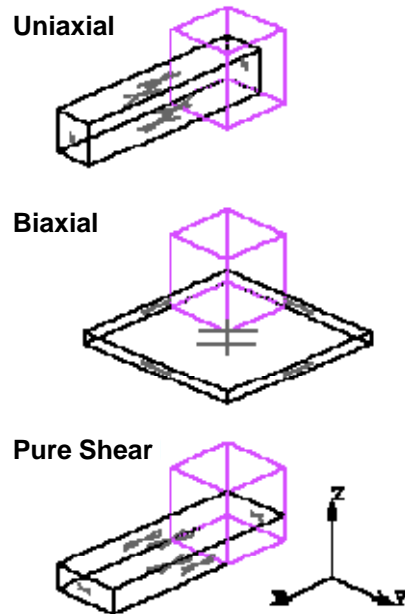


Identification result:
Stress-strain relationship

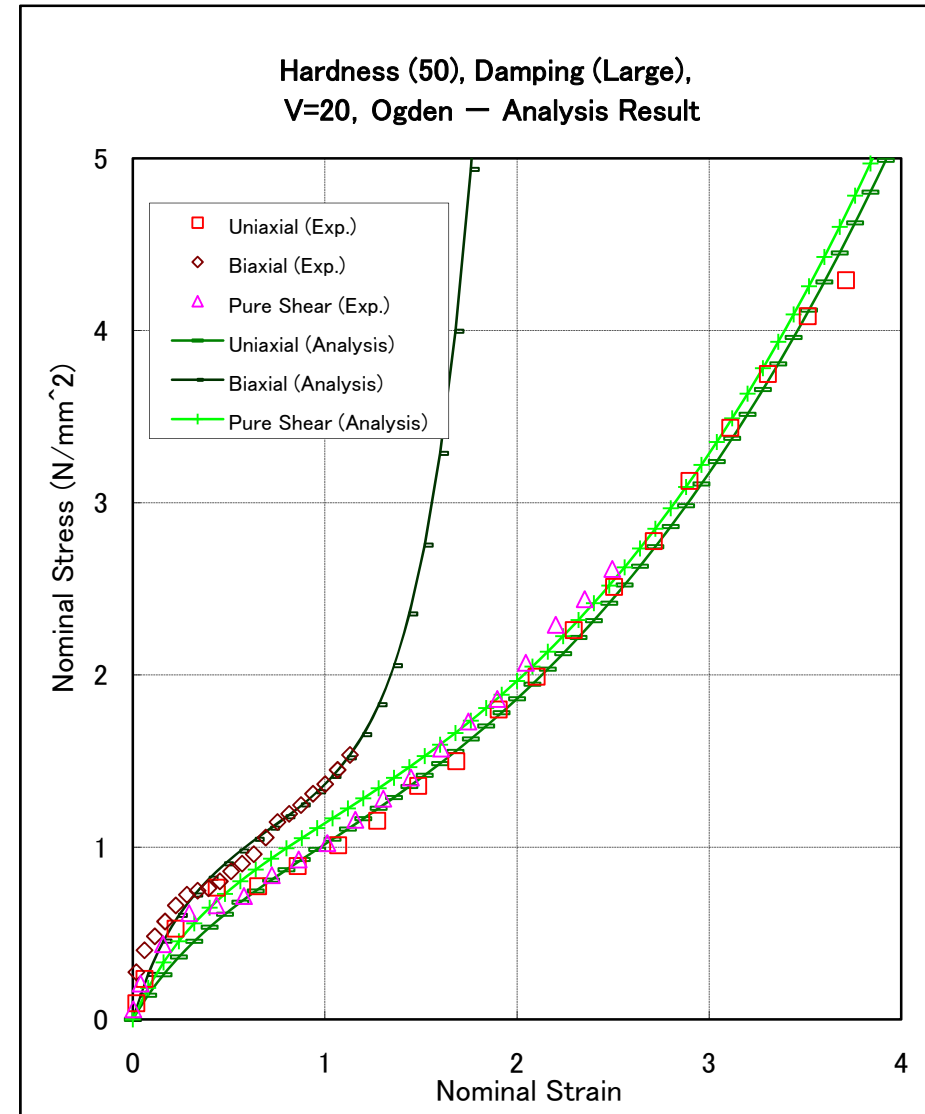
Analysis with Odgen model: Hardness (50), Damping (Large), V=20

ABAQUS

Input File: ys_nls_v20_abaqus_o.inp



Analysis model



Analysis result:
Stress-strain relationship