

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

ABAQUS

Mooney model

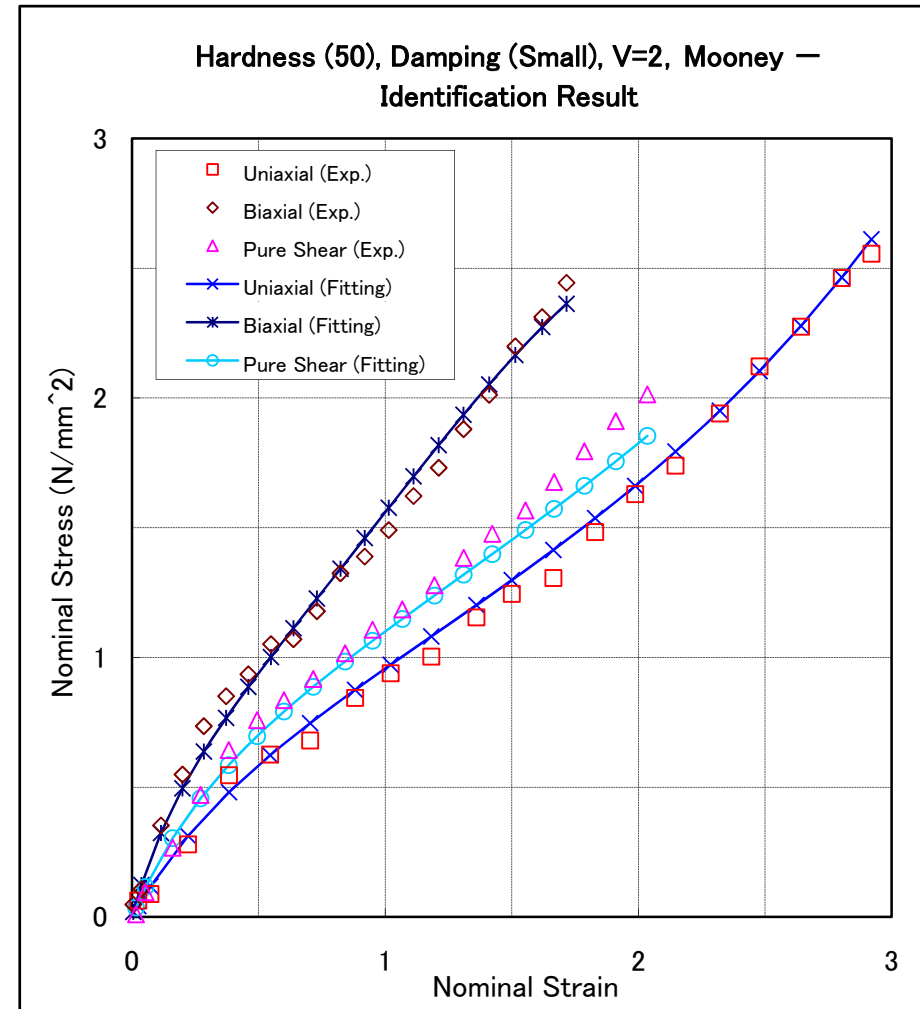
$$W = \sum_{m=1}^N \sum_{n=1}^N C_{mn} (I_1 - 3)^m (I_2 - 3)^n$$

Rate of Loading in Tension Test(s)

2 mm/s

Coefficient

| Coefficient | |
|-------------|------------|
| C10 (C1) | 0.264439 |
| C01 (C2) | 0.0241173 |
| C20 (C3) | 0.00167611 |
| C11 (C4) | – |
| C02 (C5) | – |
| C30 (C6) | – |
| C21 (C7) | |
| C12 (C8) | |
| C03 (C9) | |
| C40 (C10) | |



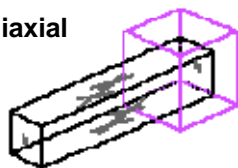
Identification result:
Stress-strain relationship

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

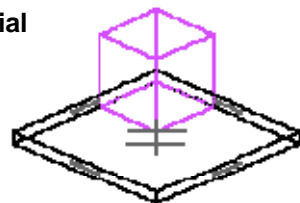
ABAQUS

Input File: ys_nss_v2_abaqus_m.inp

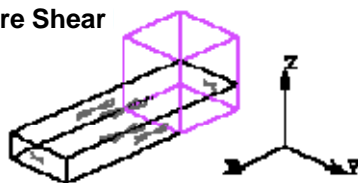
Uniaxial



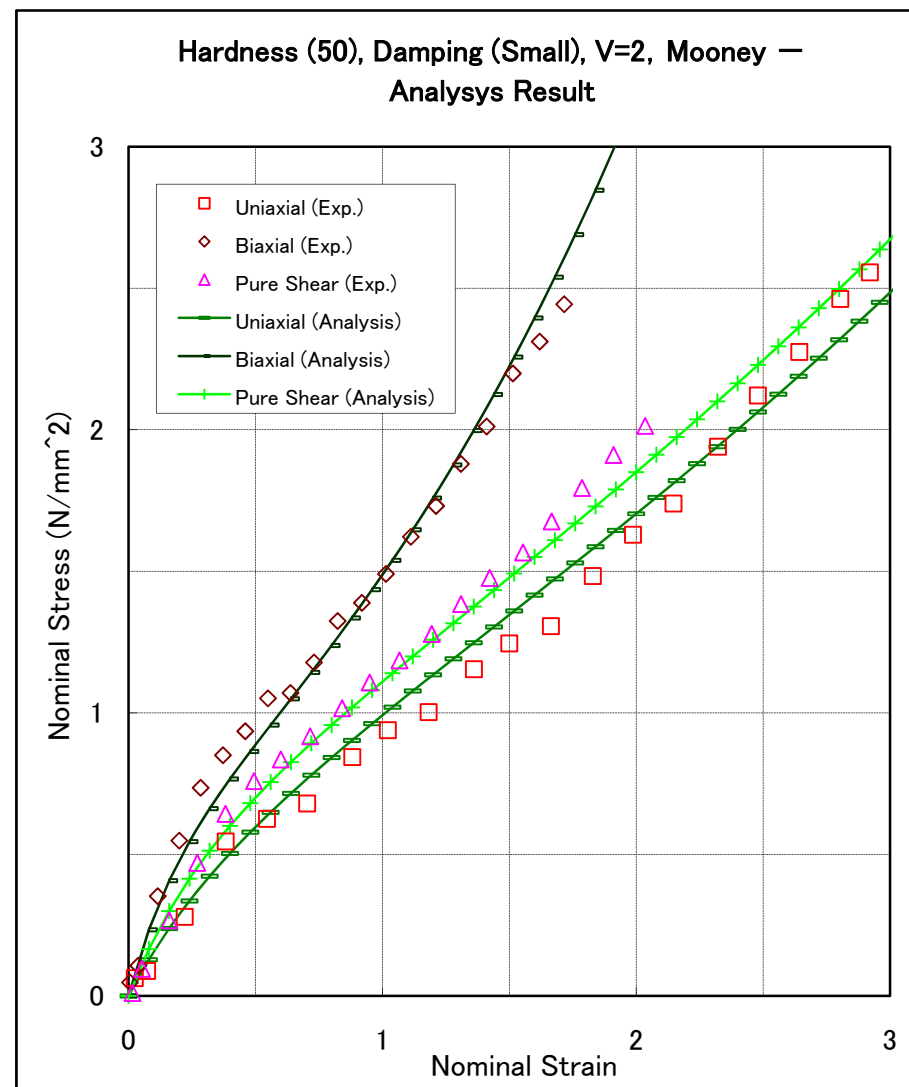
Biaxial



Pure Shear



Analysis model



Analysis result:
Stress-strain relationship

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

ABAQUS

Mooney model

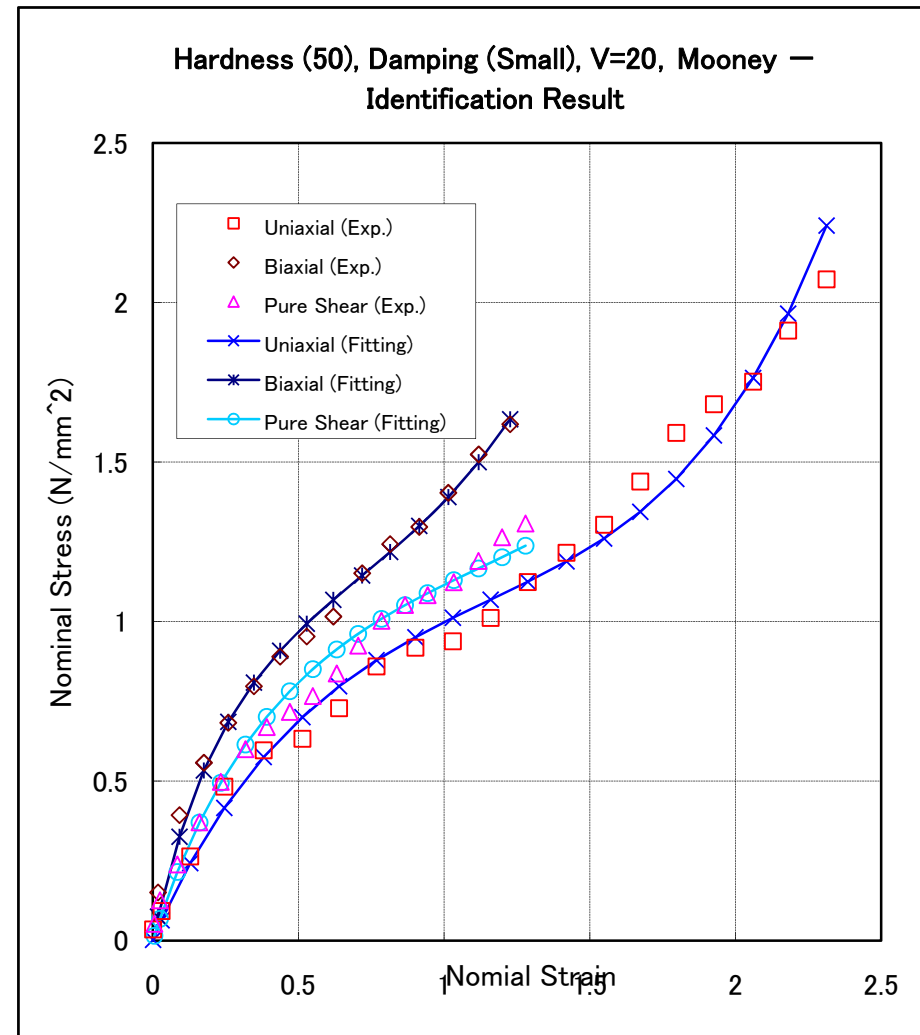
$$W = \sum_{m=1}^N \sum_{n=1}^N C_{mn} (I_1 - 3)^m (I_2 - 3)^n$$

Rate of Loading in Tension Test(s)

20 mm/s

Coefficient

| Coefficient | |
|-------------|-------------|
| C10 (C1) | 0.317485 |
| C01 (C2) | 0.0426001 |
| C20 (C3) | -0.0162620 |
| C11 (C4) | -0.00243549 |
| C02 (C5) | - |
| C30 (C6) | 0.00141298 |
| C21 (C7) | |
| C12 (C8) | |
| C03 (C9) | |
| C40 (C10) | |

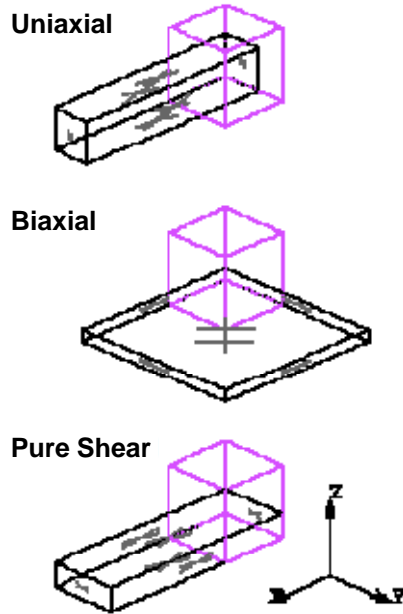


**Identification result:
Stress-strain relationship**

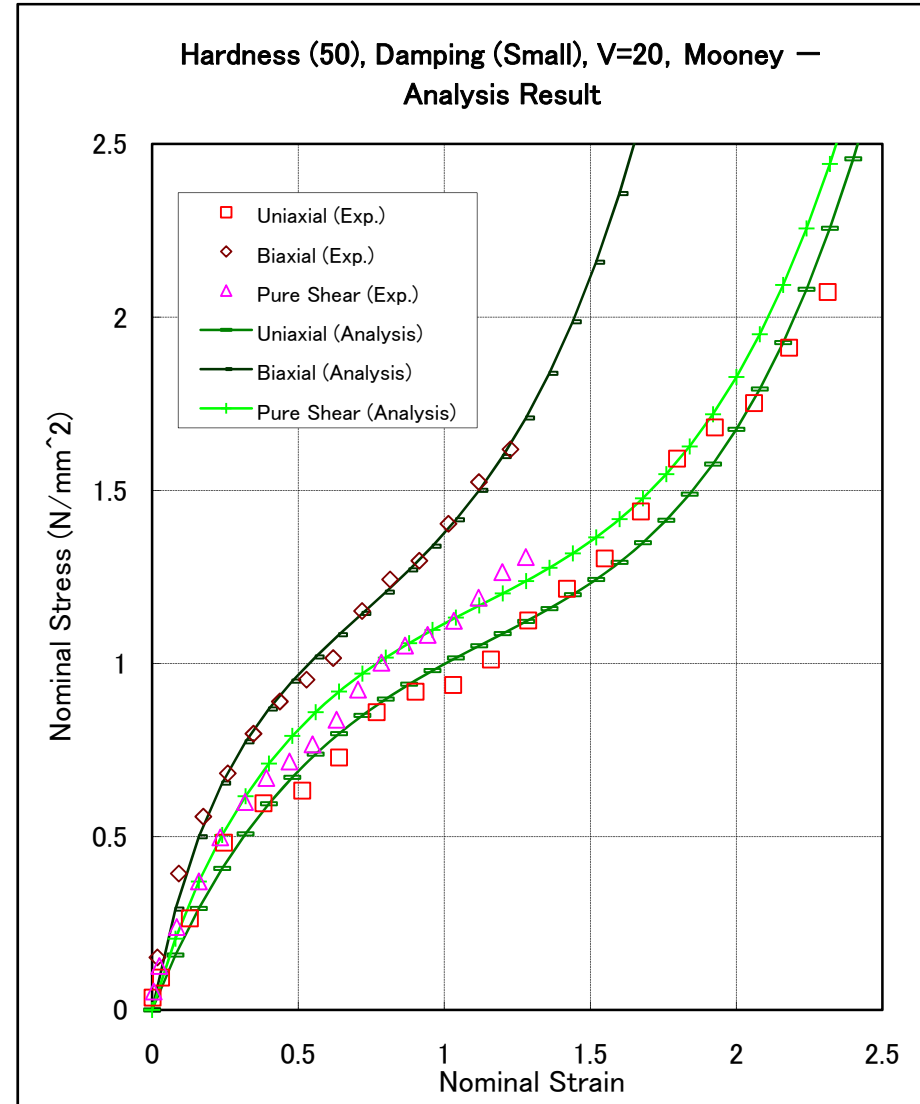
Analysis with Mooney model: Hardness (50), Damping (Small), V=20

ABAQUS

Input File: ys_nss_v20_abaqus_m.inp



Analysis model



Analysis result:
Stress-strain relationship

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

ABAQUS

Ogden model

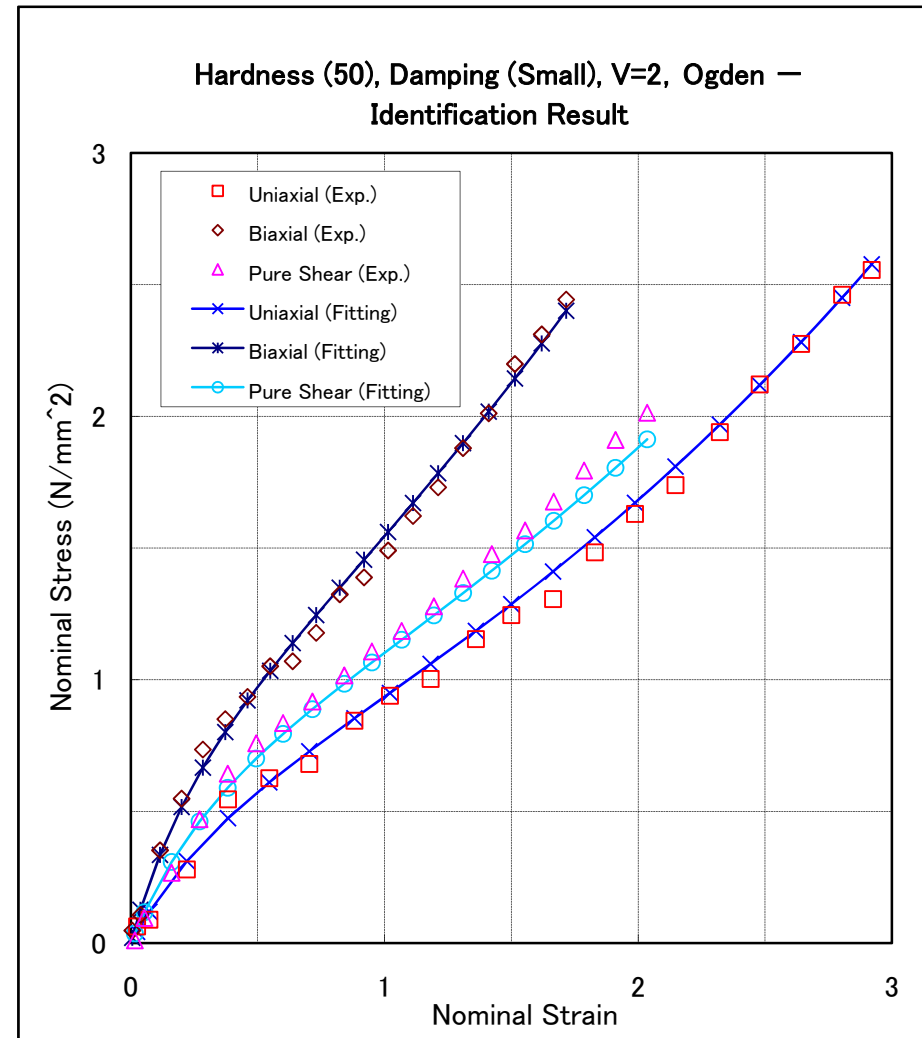
$$W = \sum_{n=1}^N \frac{2\mu_n}{\alpha_n^2} \left[(\lambda_1^{\alpha_n} + \lambda_2^{\alpha_n} + \lambda_3^{\alpha_n}) - 3 \right]$$

Rate of Loading in Tension Test(s)

2 mm/s

Coefficient

| Coefficient | | |
|-------------|---------------|----------|
| Order | μ | α |
| 1 | 0.182145 | 3.09862 |
| 2 | 0.00003032790 | 1.13533 |
| 3 | 0.115710 | -1.32914 |
| 4 | 0.294214 | 0.636493 |

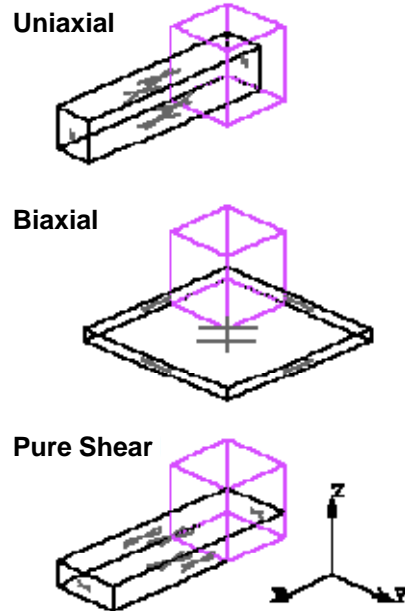


Identification result:
Stress-strain relationship

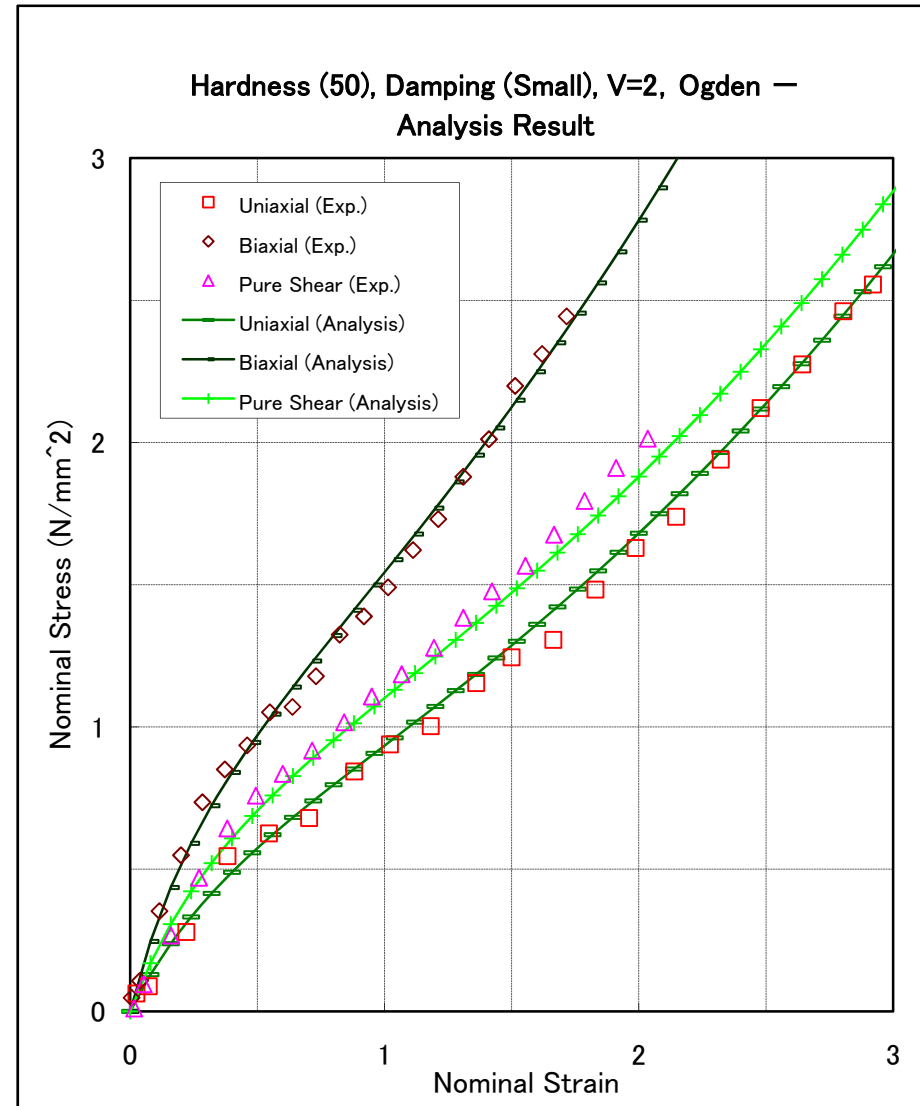
Analysis with Ogden model: Hardness (50), Damping (Small), V=2

ABAQUS

Input File: ys_nss_v2_abaqus_o.inp



Analysis model



Analysis result:
Stress-strain relationship

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

ABAQUS

Ogden model

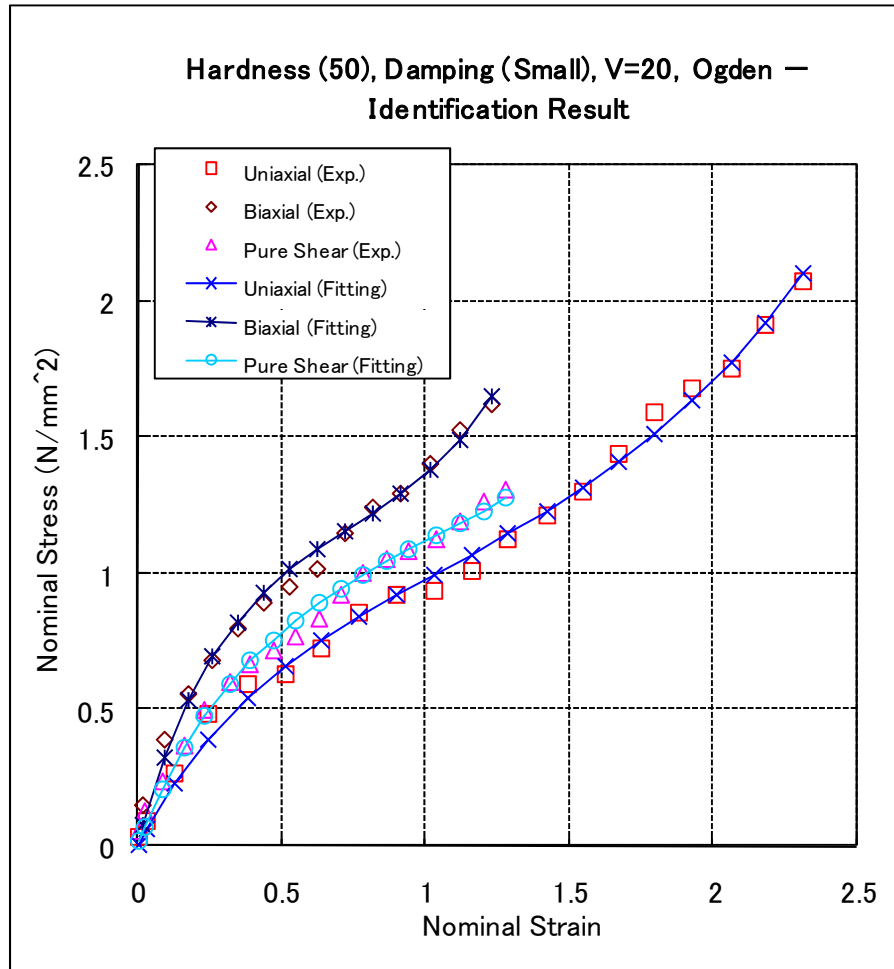
$$W = \sum_{n=1}^N \frac{2\mu_n}{\alpha_n^2} \left[(\lambda_1^{\alpha_n} + \lambda_2^{\alpha_n} + \lambda_3^{\alpha_n}) - 3 \right]$$

Rate of Loading in Tension Test(s)

20 mm/s

Coefficient

| Coefficient | | |
|-------------|--------------|----------|
| Order | μ | α |
| 1 | 0.00971475 | 5.70082 |
| 2 | 0.684779 | 1.01497 |
| 3 | 0.000107350 | -6.04616 |
| 4 | 0.0000455123 | 1.21843 |



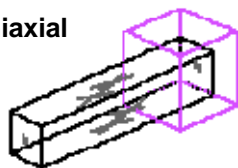
Identification result:
Stress-strain relationship

Analysis with Ogden model: Hardness (50), Damping (Small), V=20

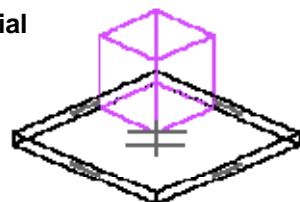
ABAQUS

Input File: ys_nss_v20_abaqus_o.inp

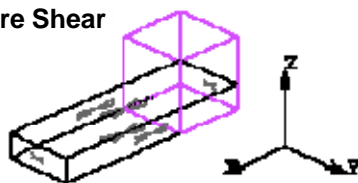
Uniaxial



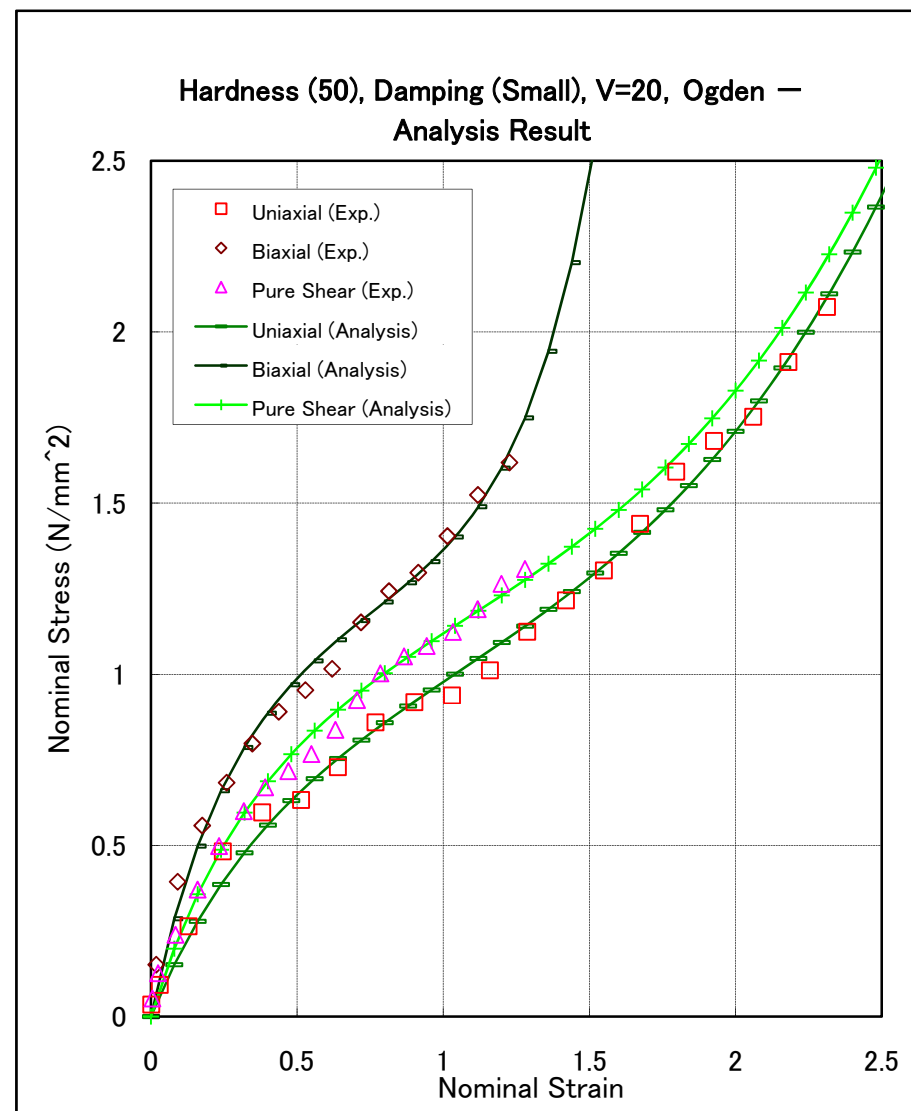
Biaxial



Pure Shear



Analysis model



Analysis result:
Stress-strain relationship