# FORMULA RENAULT 2.0
# USER MANUAL
2011


# F. PNEUMATIQUES

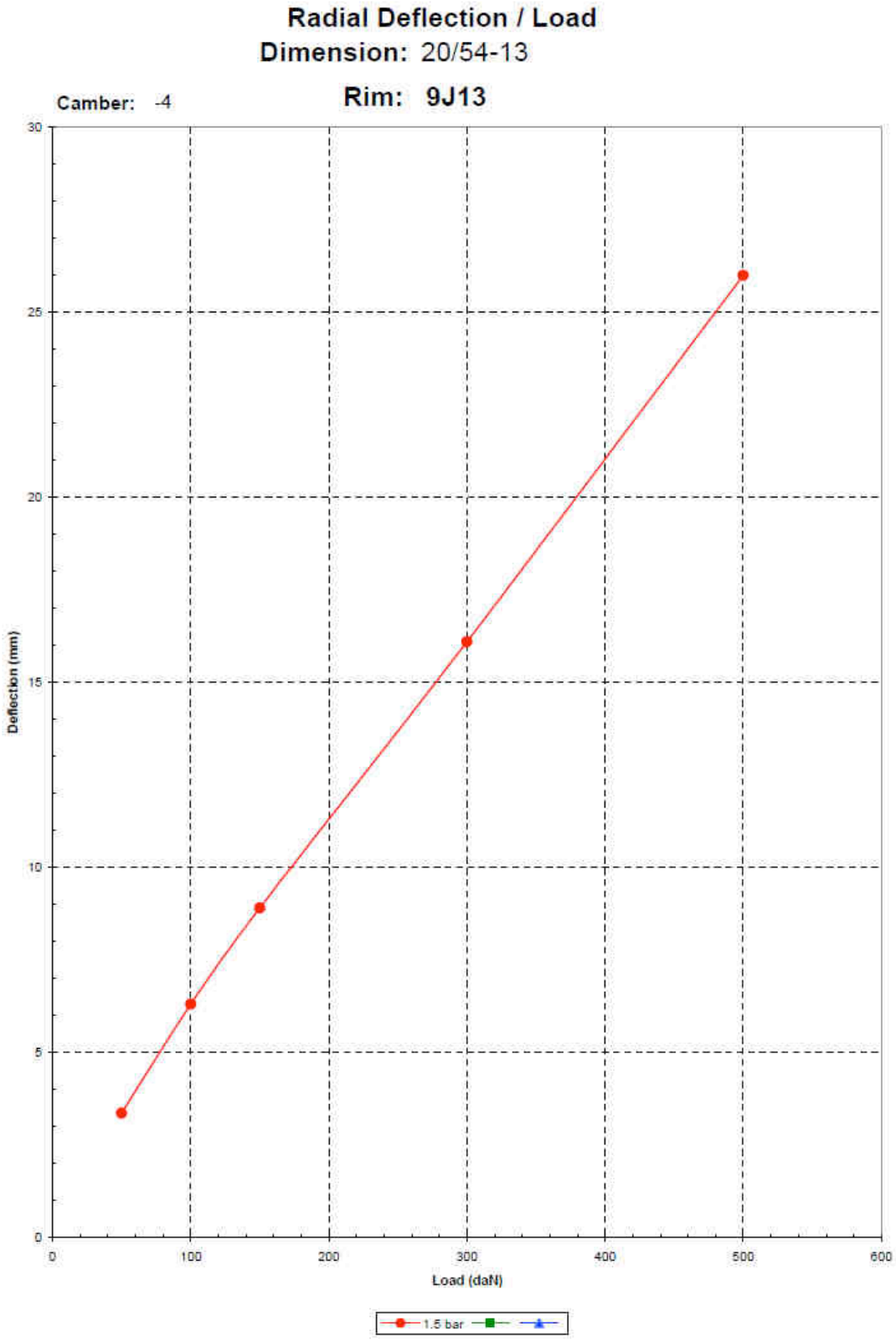
RENAULT SPORT

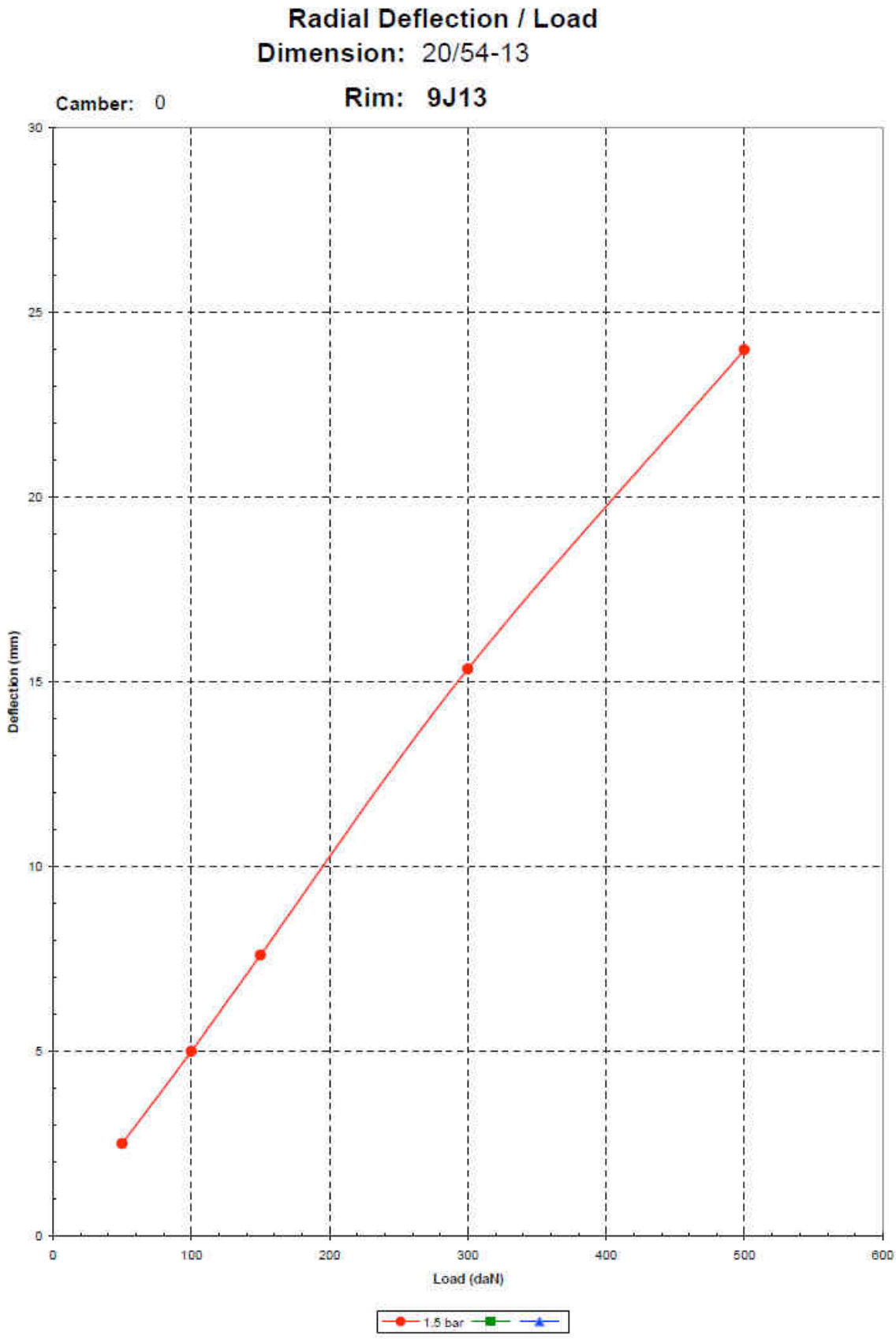
RENAULT

## SOMMAIRE

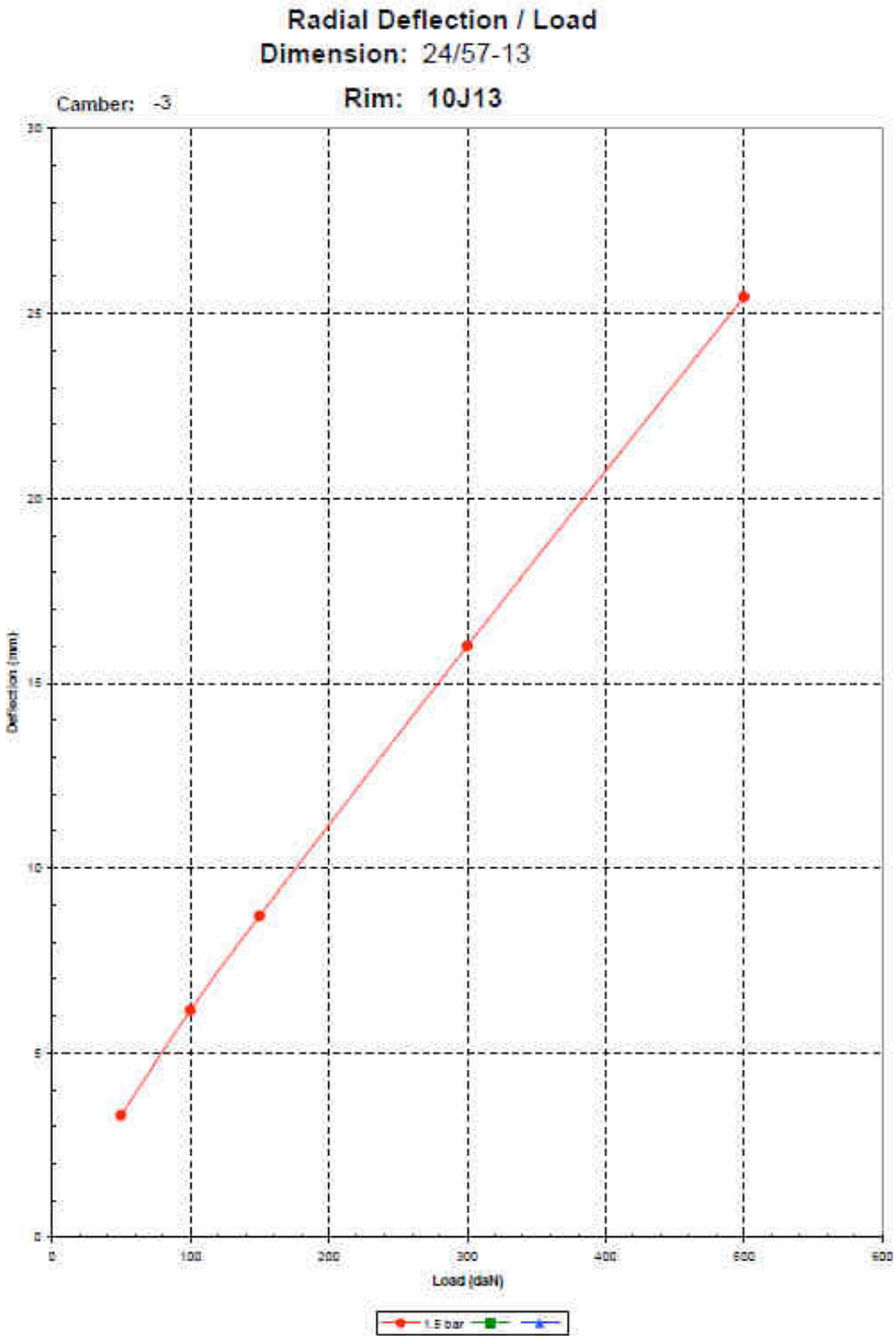
# 1. RAIDEUR RADIALE STATIQUE

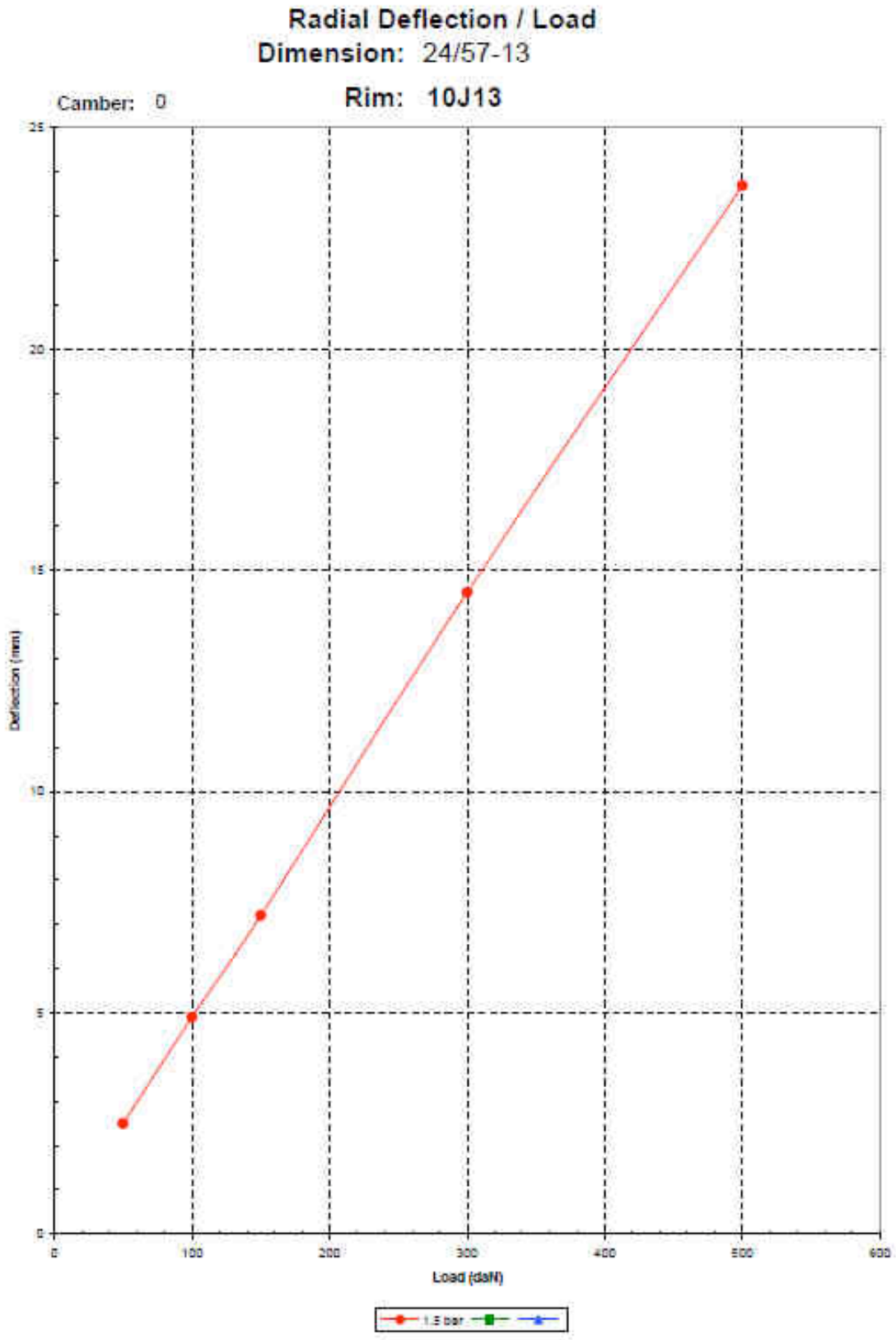
## 1.1. 20/54-13 Avant




Radial Deflection / Load
Dimension: 20/54-13
Camber: 0
Rim: 9J13
Deflection (mm)
Load (daN)
0
5
10
15
20
25
30
0
100
200
300
400
500
600
1.5 bar

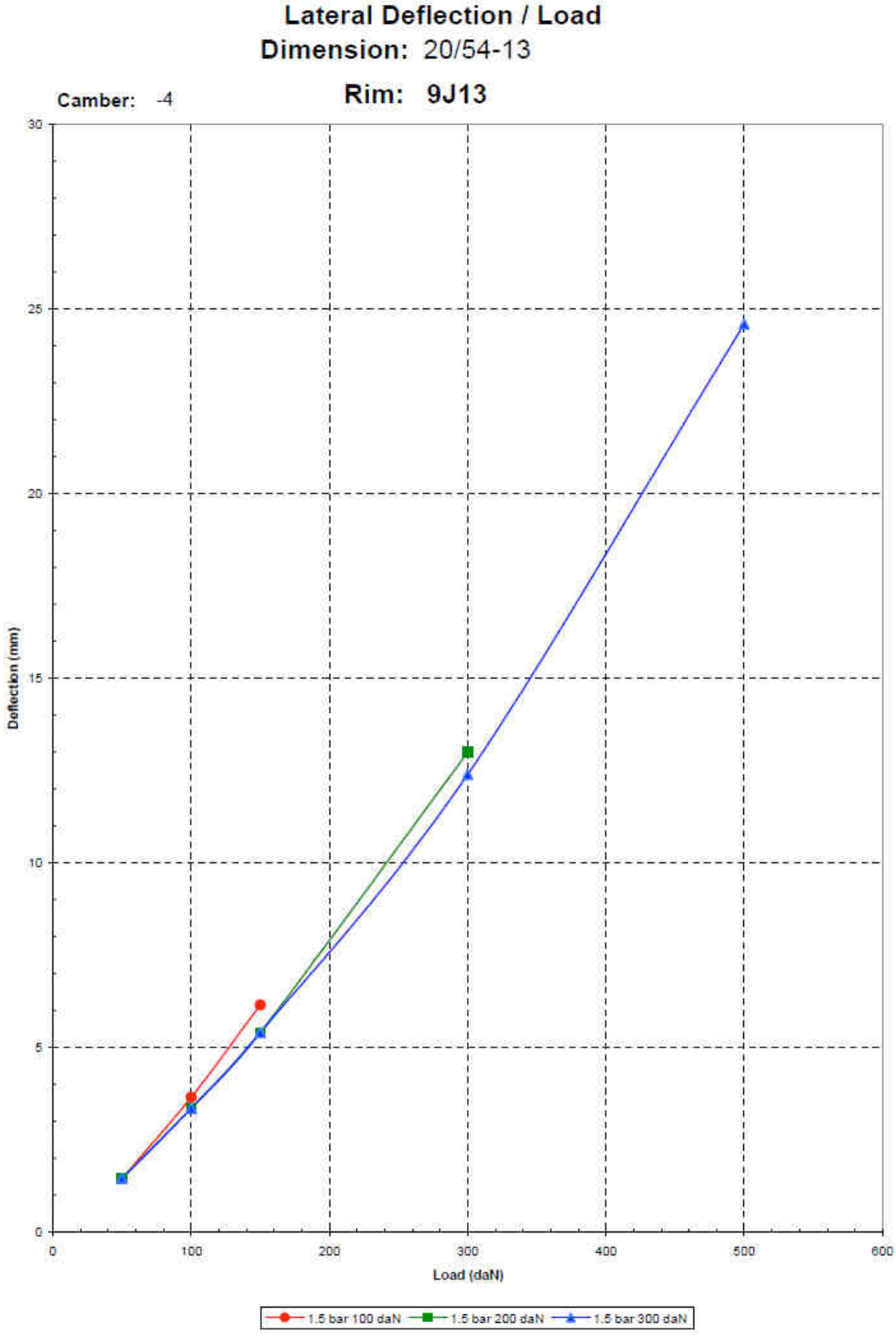
## 1.2. 24/57-13 Arrière

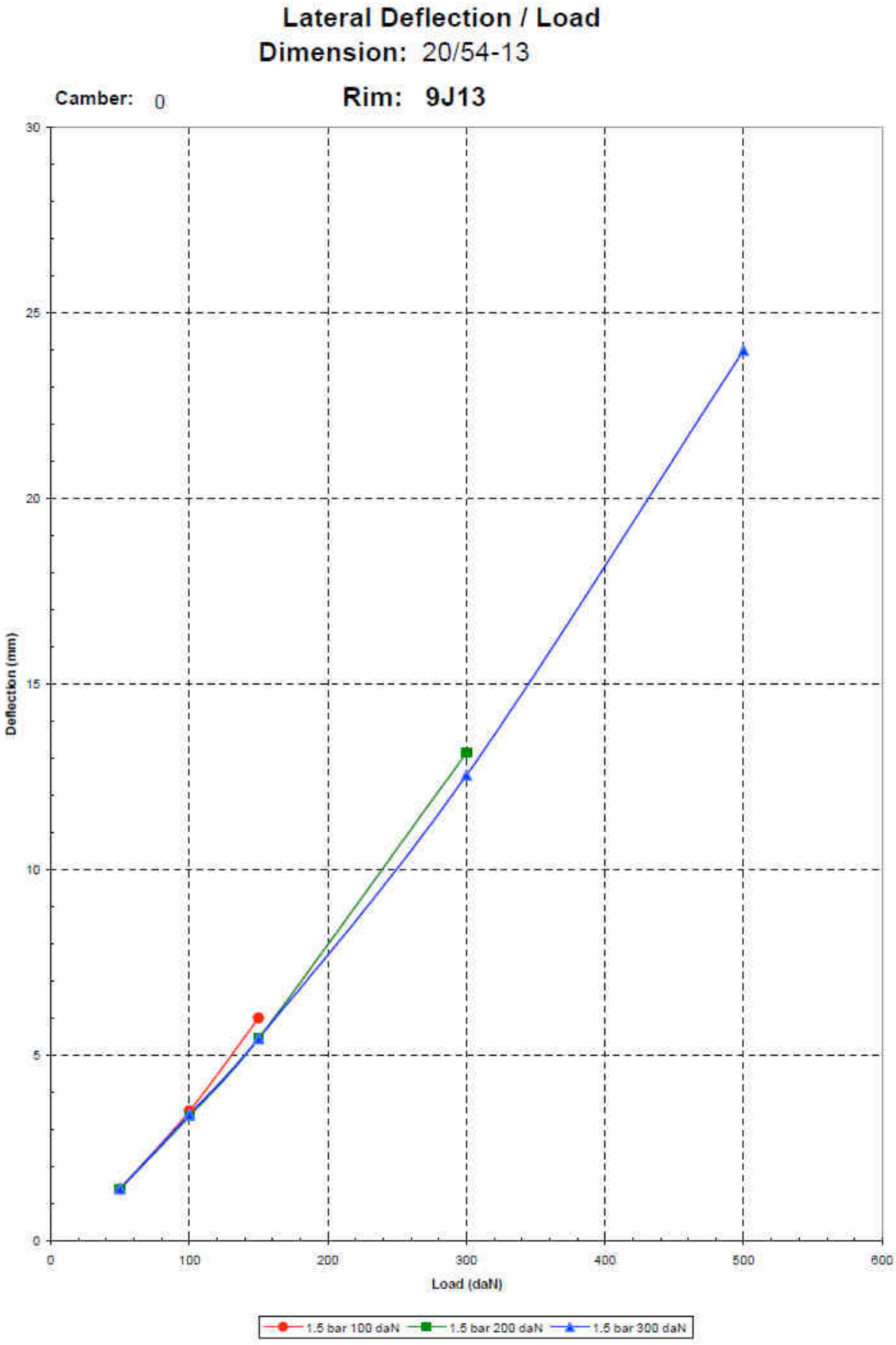



Radial Deflection / Load
Dimension: 24/57-13
Rim: 10J13
Camber: 0
Deflection (mm)
Load (daN)
0
5
10
15
20
25
0
100
200
300
400
500
600
1.5 bar

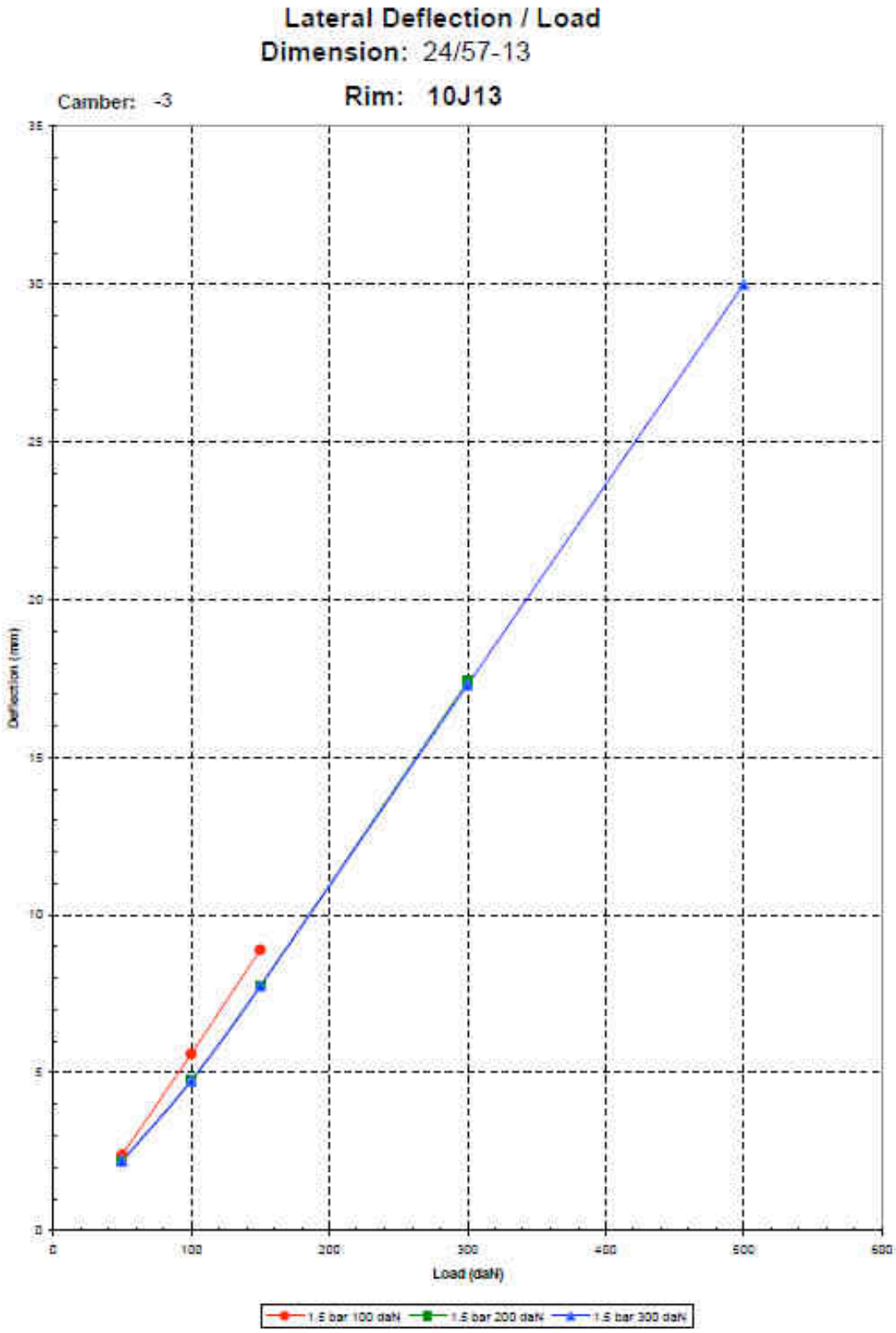
# 2. RAIDEUR LATERALE STATIQUE

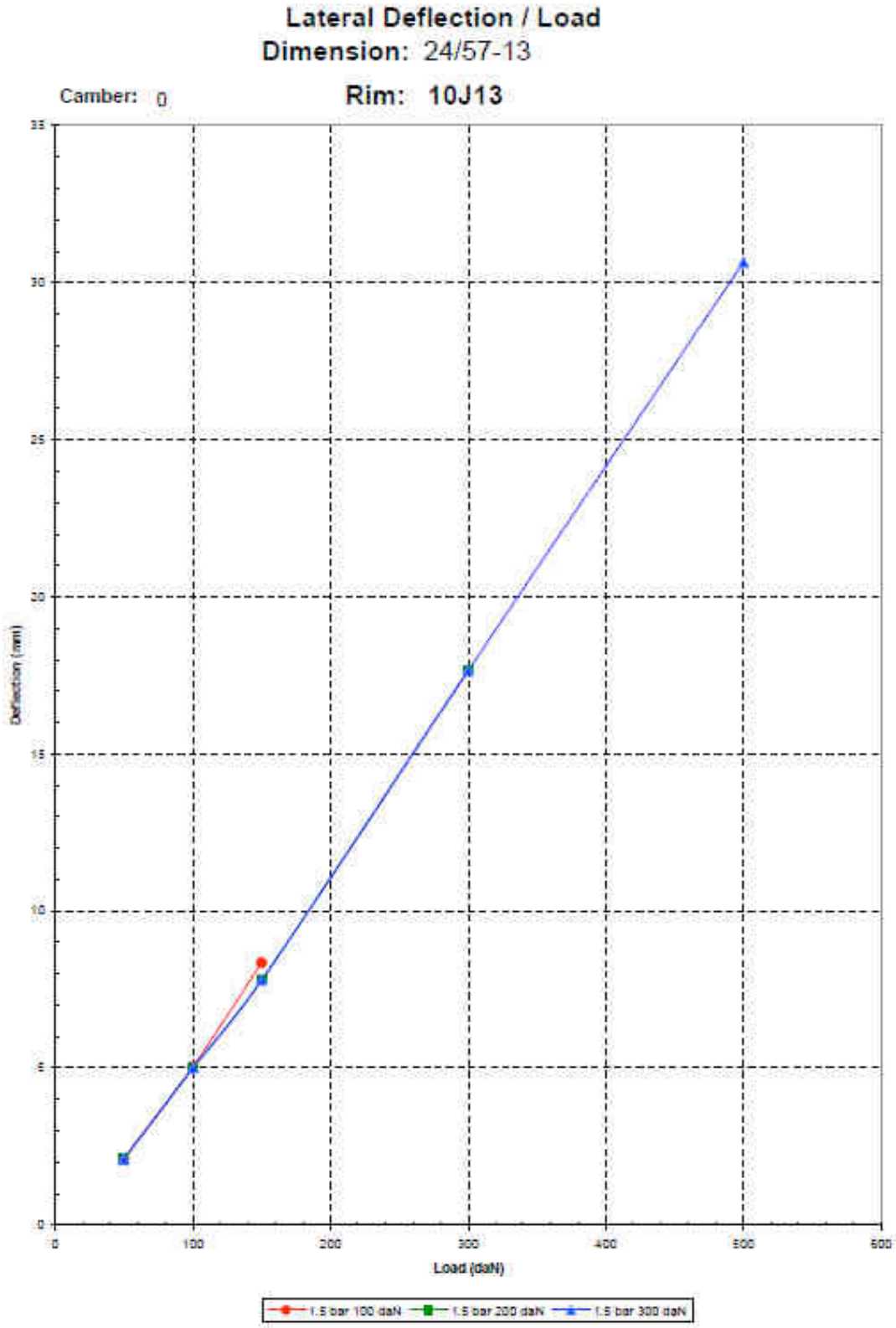
## 2.1. 20/54-13 Avant




Lateral Deflection / Load
Dimension: 20/54-13
Camber: 0
Rim: 9J13
Deflection (mm)
Load (daN)
0
5
10
15
20
25
30
0
100
200
300
400
500
600
1.5 bar 100 daN
1.5 bar 200 daN
1.5 bar 300 daN

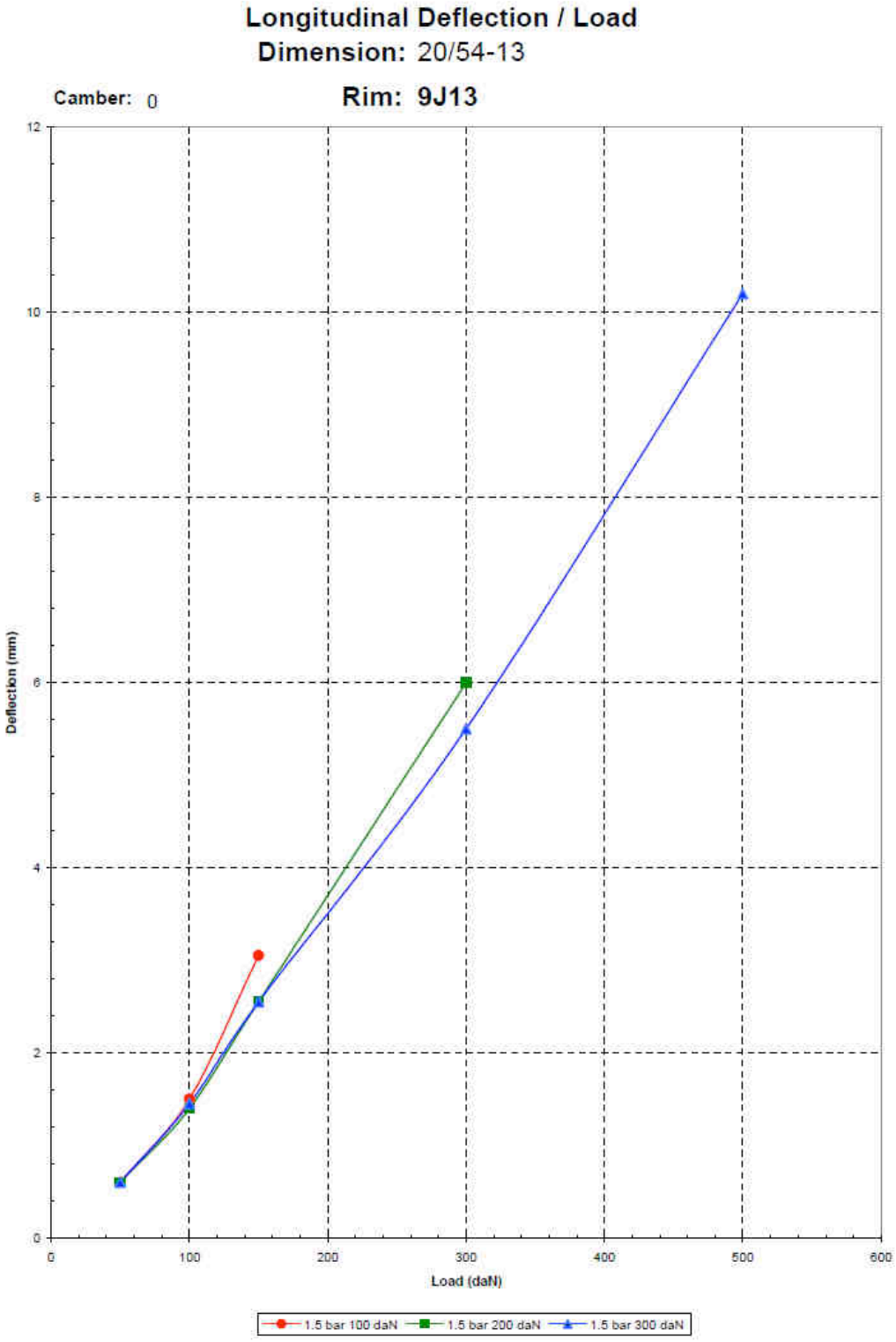
## 2.2. 24/57-13 Arrière



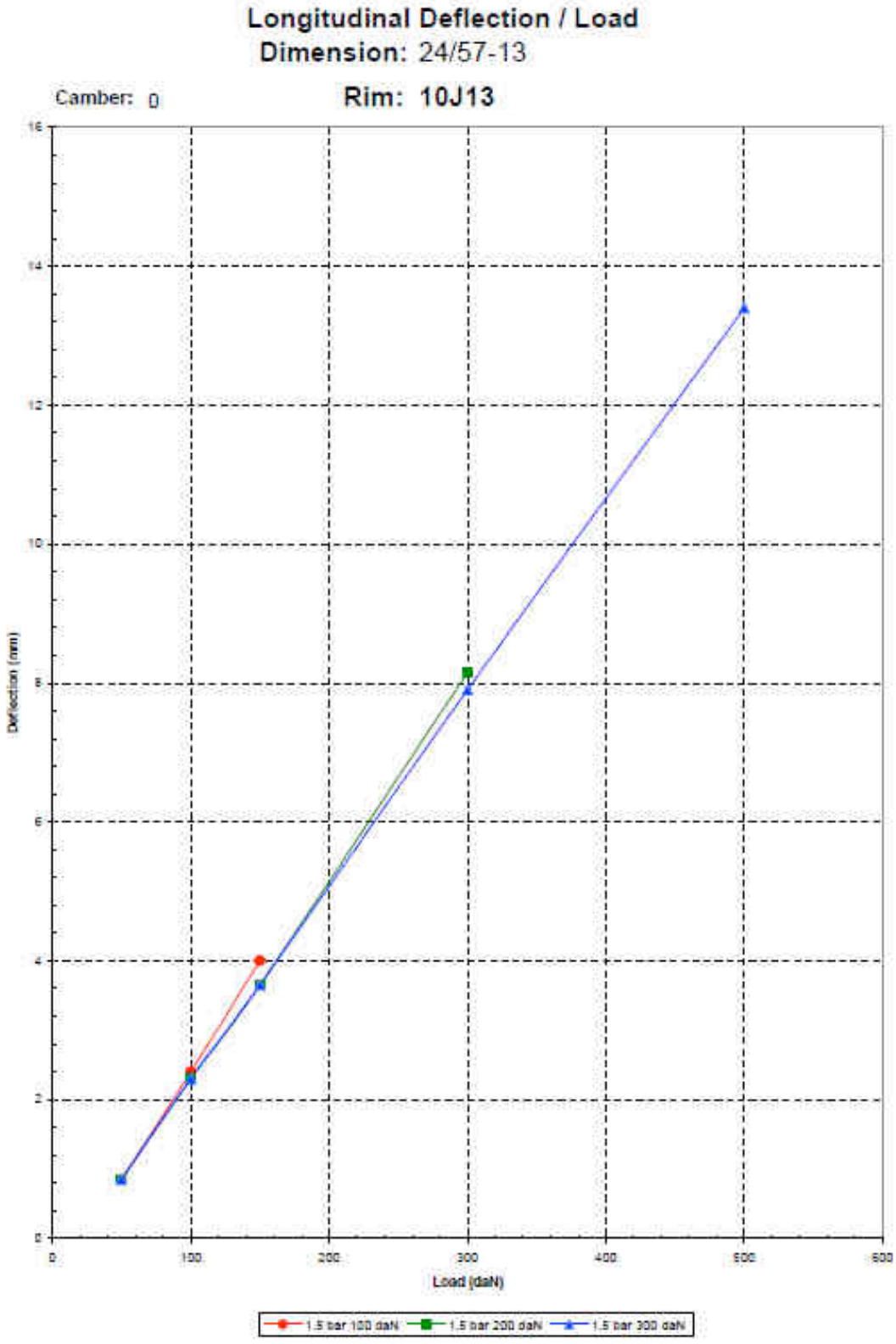

Lateral Deflection / Load
Dimension: 24/57-13
Camber: 0
Rim: 10J13
Deflection (mm)
Load (daN)
0
100
200
300
400
500
600
1.5 bar 100 daN
1.5 bar 200 daN
1.5 bar 300 daN

# 3. RAIDEUR LONGITUDINALE STATIQUE

## 3.1. 20/54-13 Avant

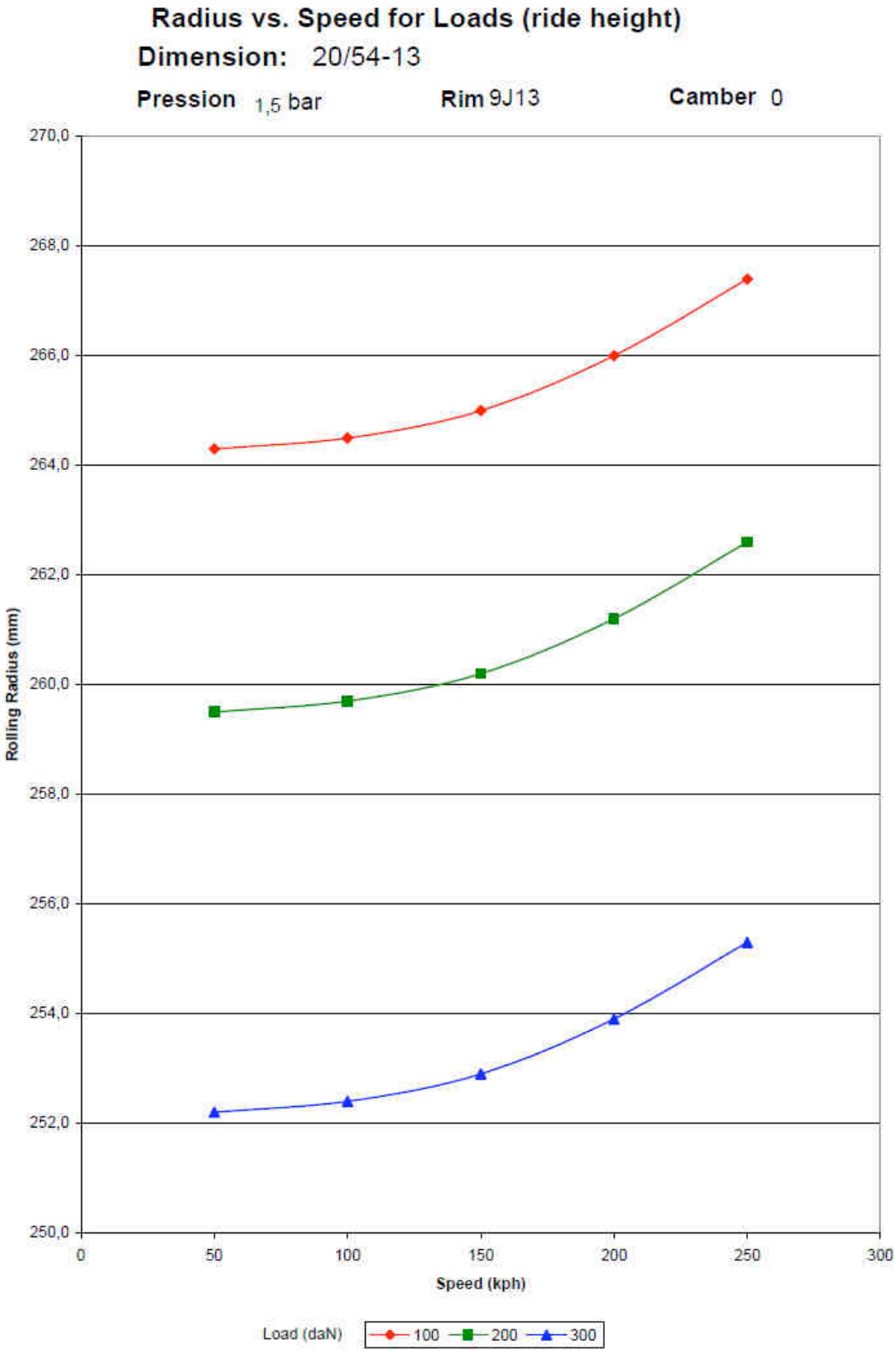


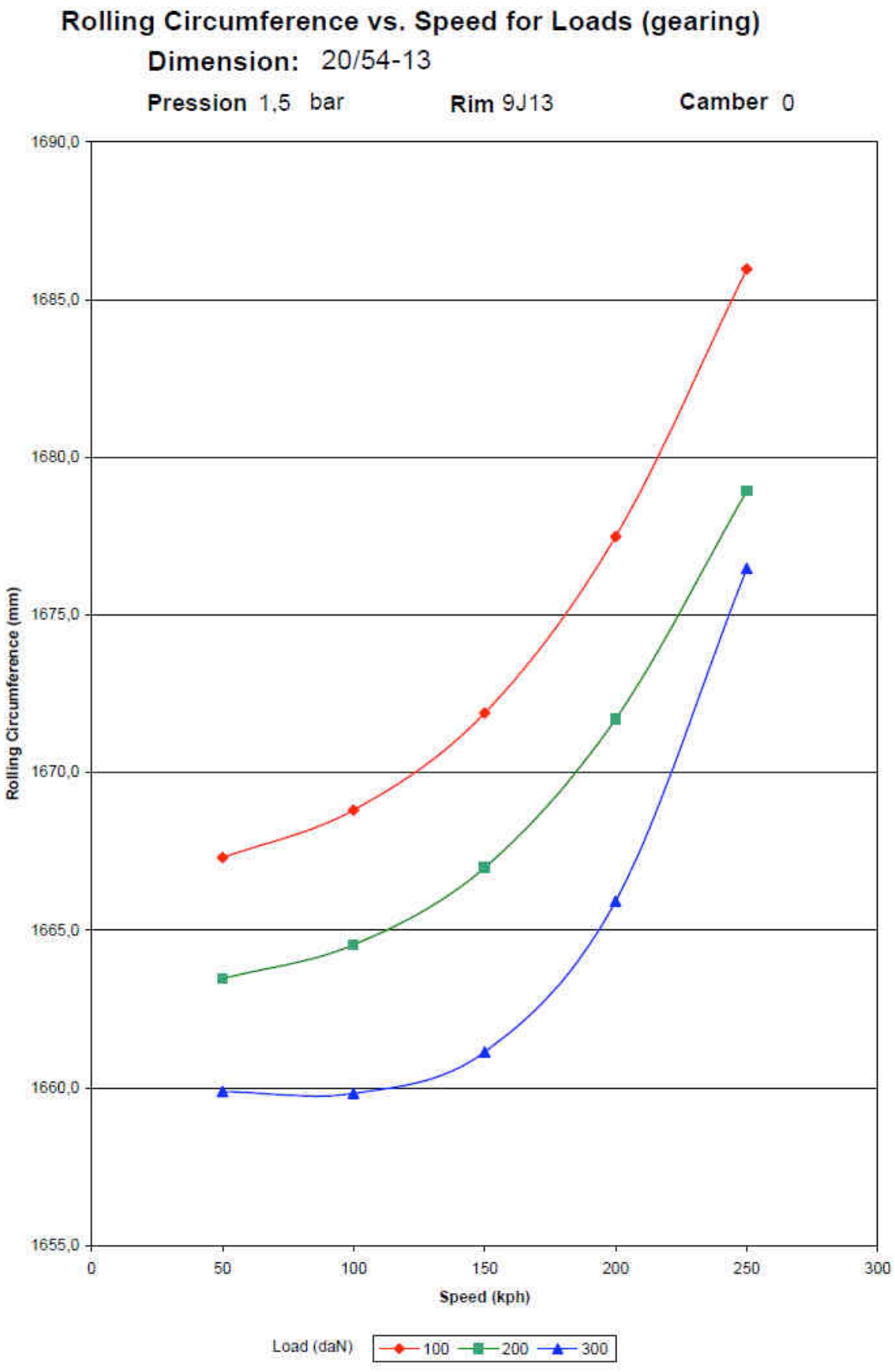
## 3.2. 24/57-13 Arrière



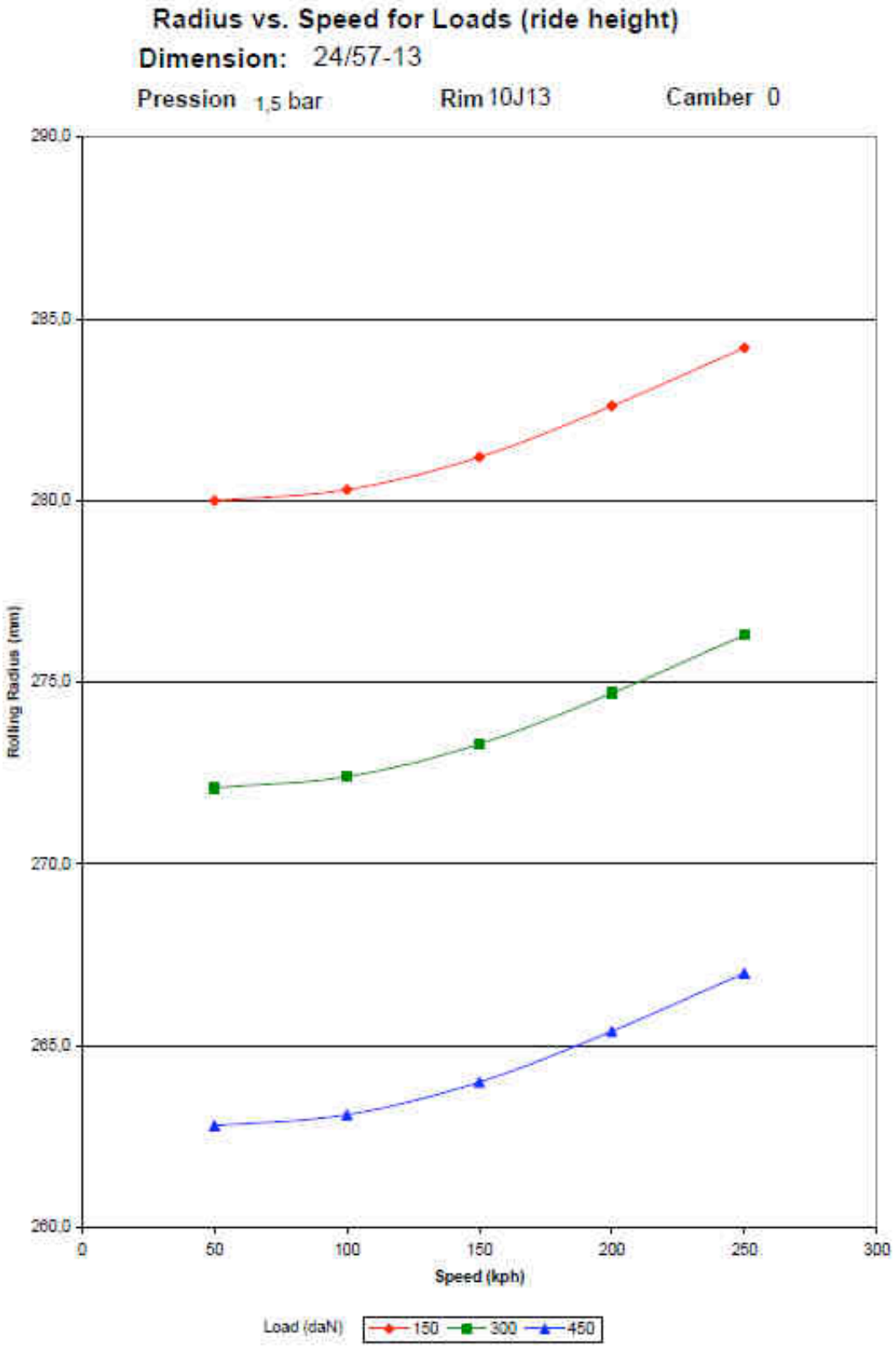
# 4. RAYON SOUS CHARGE DYNAMIQUE

## 4.1. 20/54-13 Avant

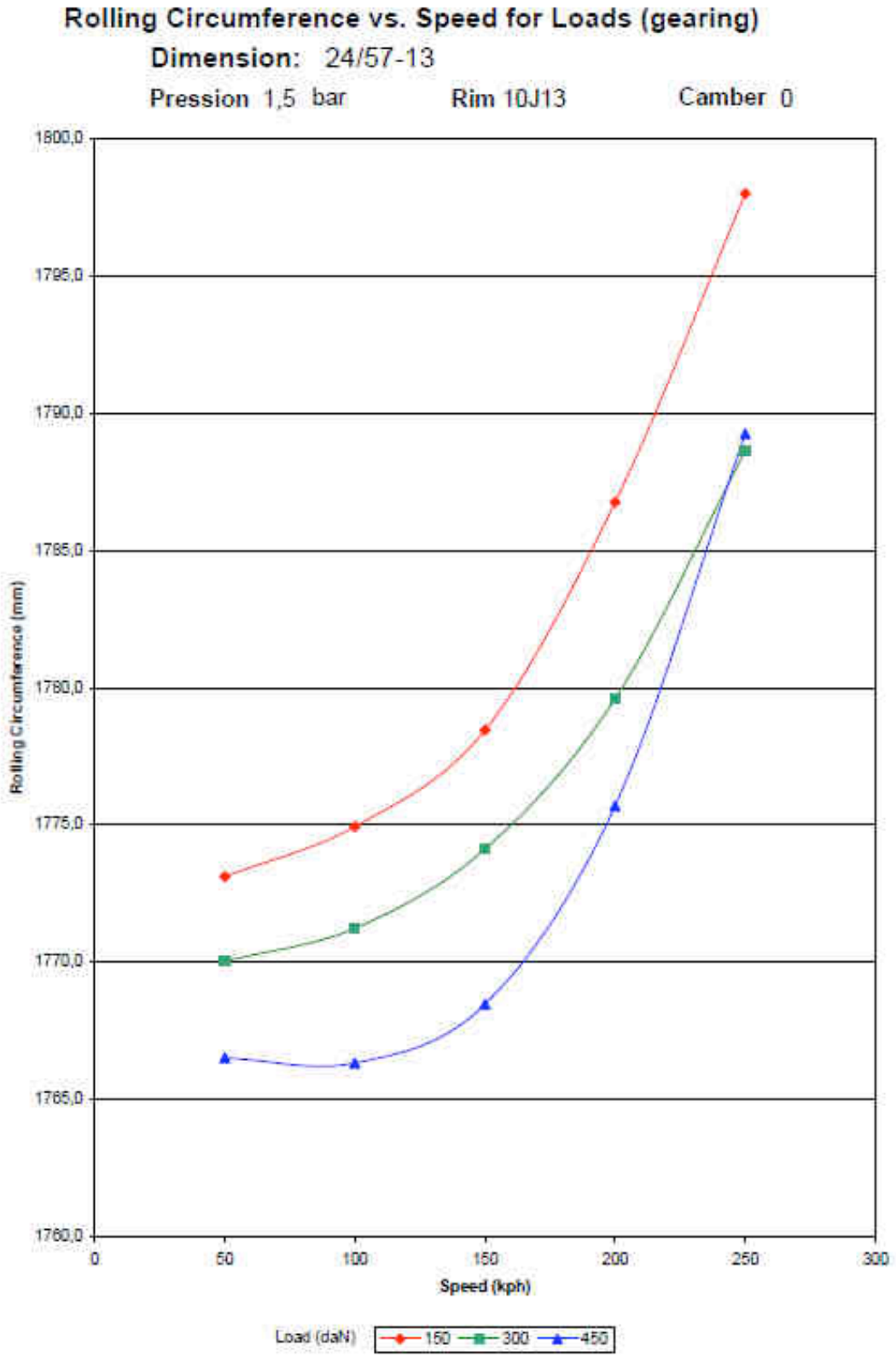



Rolling Circumference vs. Speed for Loads (gearing)
Dimension: 20/54-13
Pression 1,5 bar
Rim 9J13
Camber 0
1690,0
1685,0
1680,0
1675,0
1670,0
1665,0
1660,0
1655,0
Rolling Circumference (mm)
0
50
100
150
200
250
300
Speed (kph)
Load (daN)
100
200
300

## 4.2. 24/57-13 Arrière

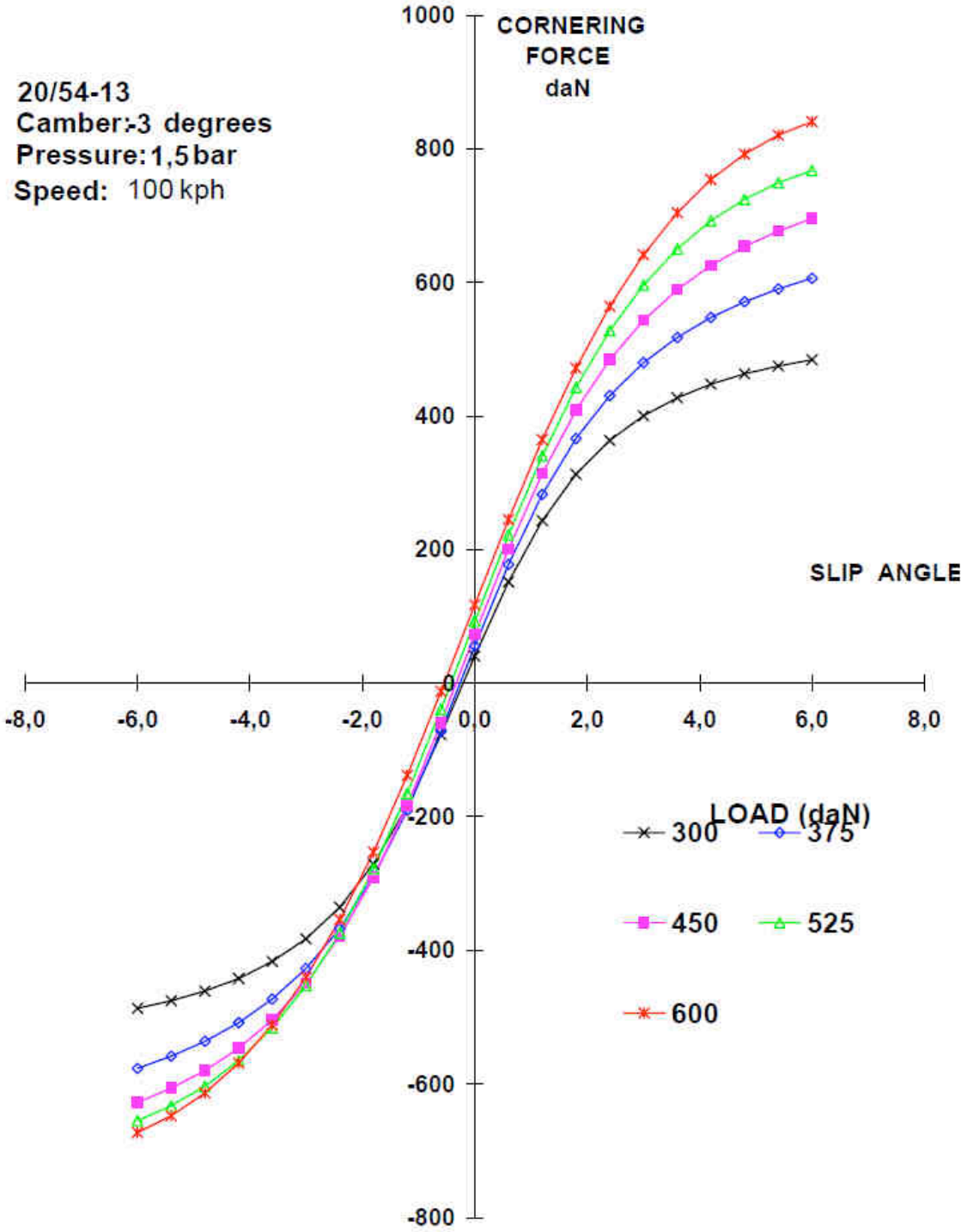


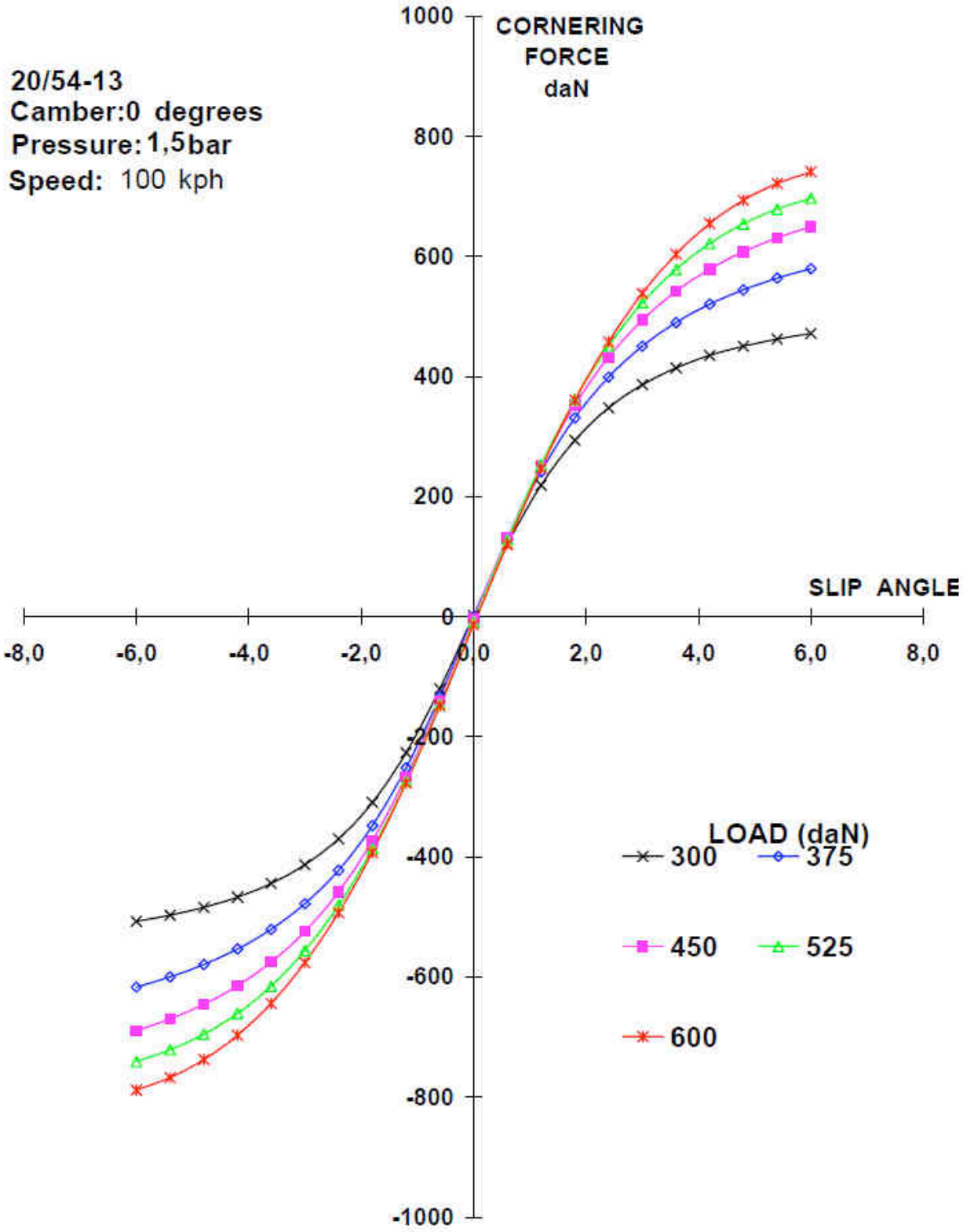

**Note :** pour obtenir le rayon sous charge dynamique d'un pneu pluie arrière, il faut ajouter 12mm aux valeurs ci-dessus obtenues avec un pneu slick.

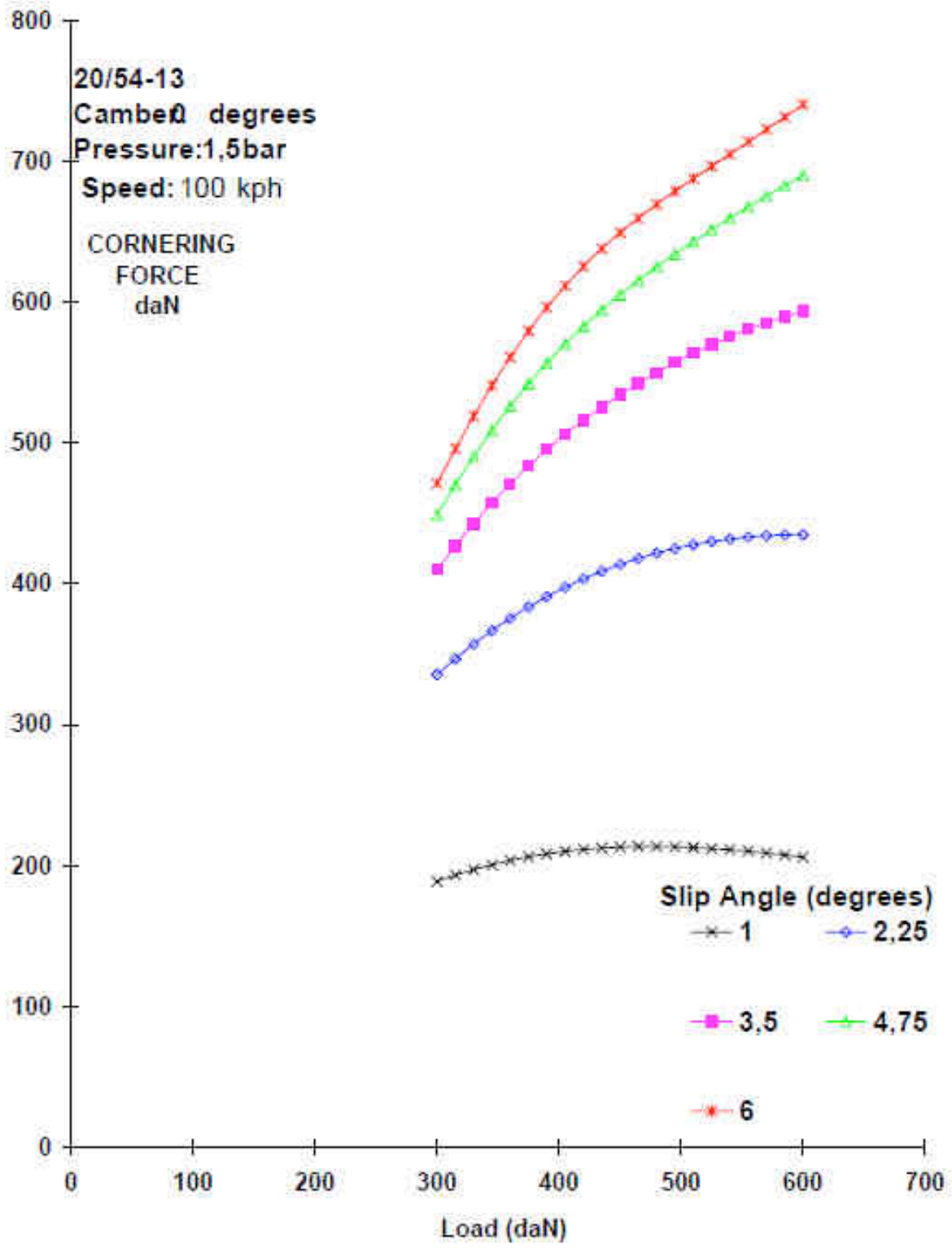

Rolling Circumference vs. Speed for Loads (gearing)
Dimension: 24/57-13
Pression 1,5 bar
Rim 10J13
Camber 0
1800,0
1795,0
1790,0
1785,0
1780,0
1775,0
1770,0
1765,0
1760,0
Rolling Circumference (mm)
0
50
100
150
200
250
300
Speed (kph)
Load (daN)
150
300
450

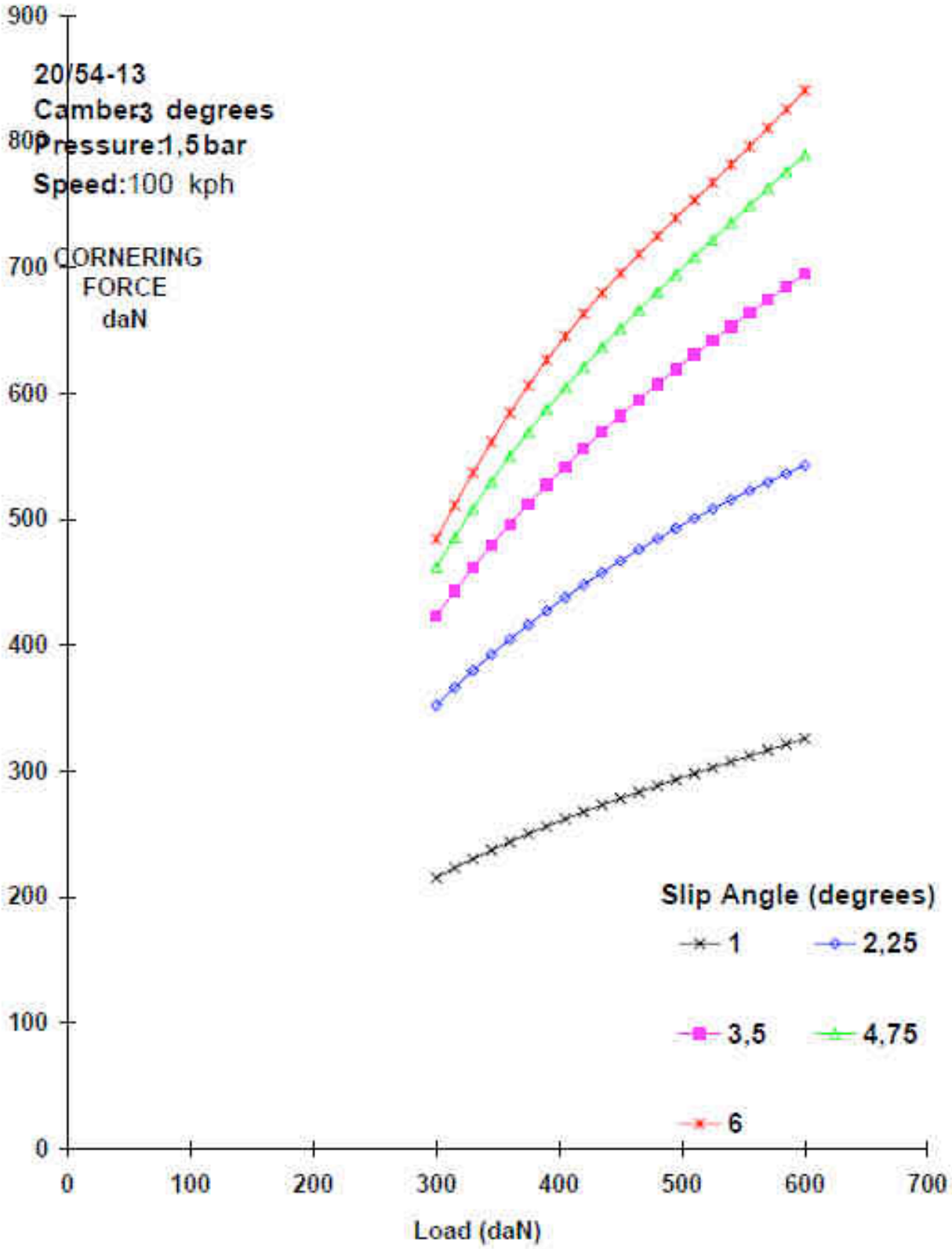
# 5. FORCE DE DERIVE

## 5.1. 20/54-13 Avant

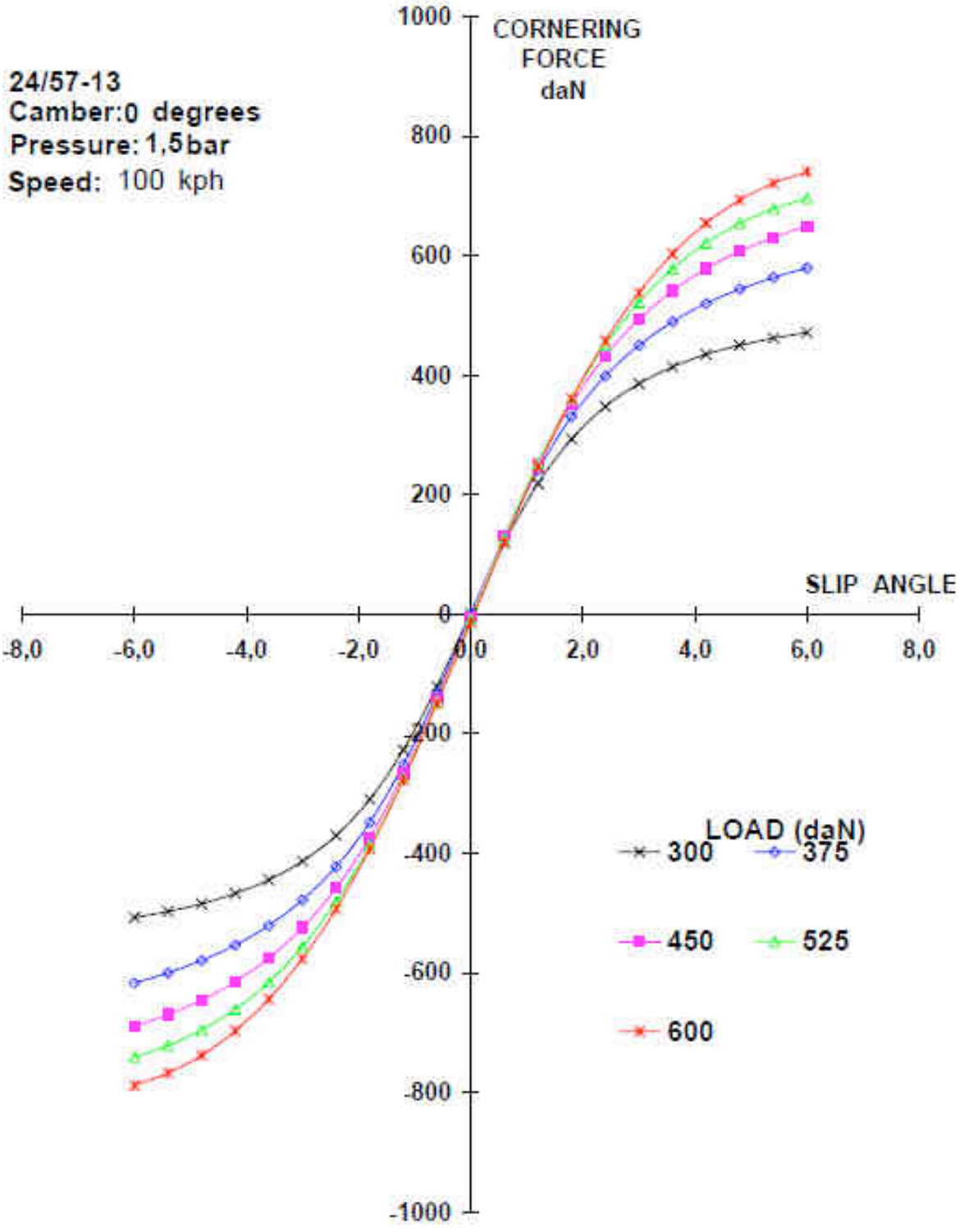


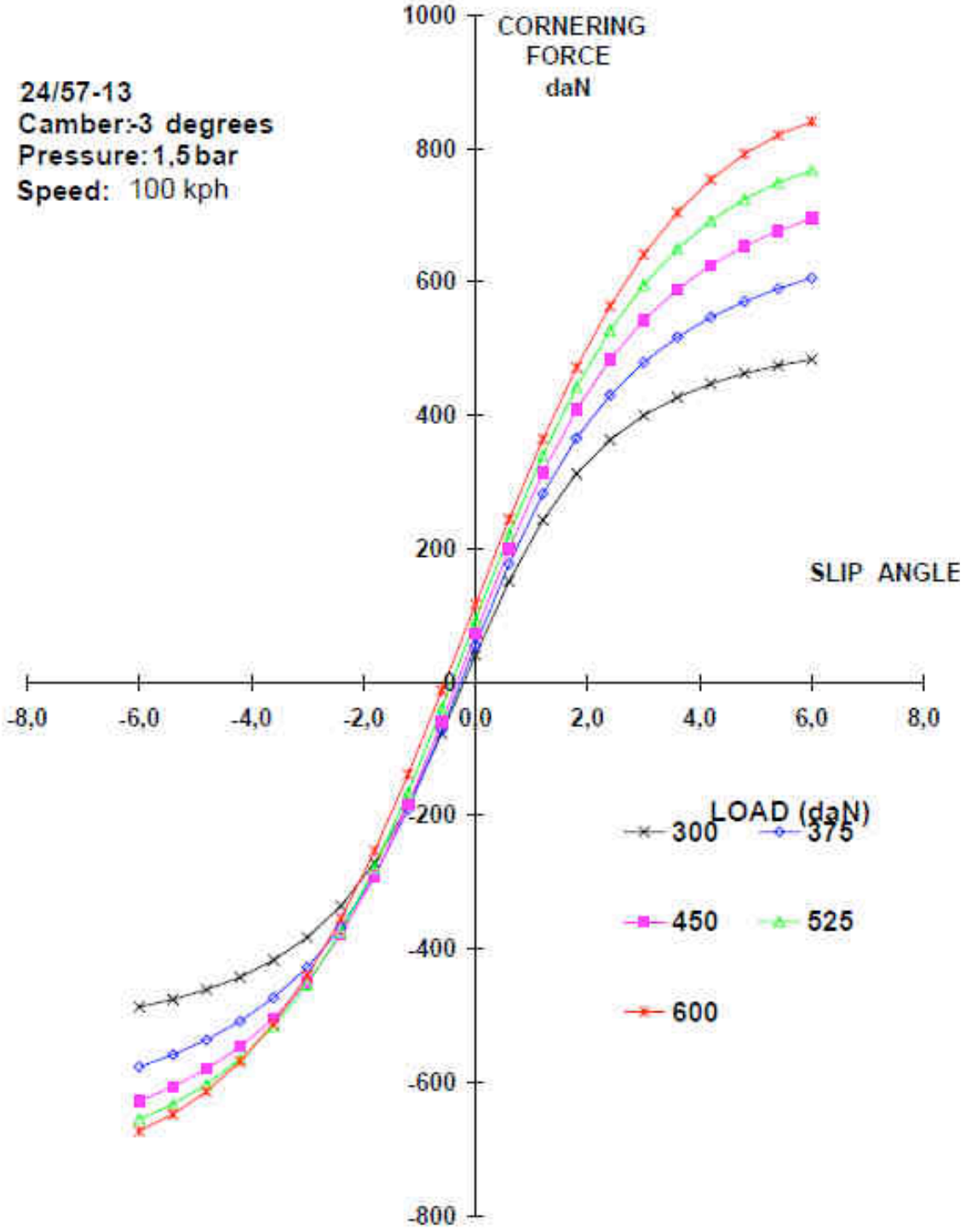

20/54-13
Camber:0 degrees
Pressure:1,5bar
Speed: 100 kph
CORNERING
FORCE
daN
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
SLIP ANGLE
-8,0
-6,0
-4,0
-2,0
0,0
2,0
4,0
6,0
8,0
LOAD (daN)
300
375
450
525
600

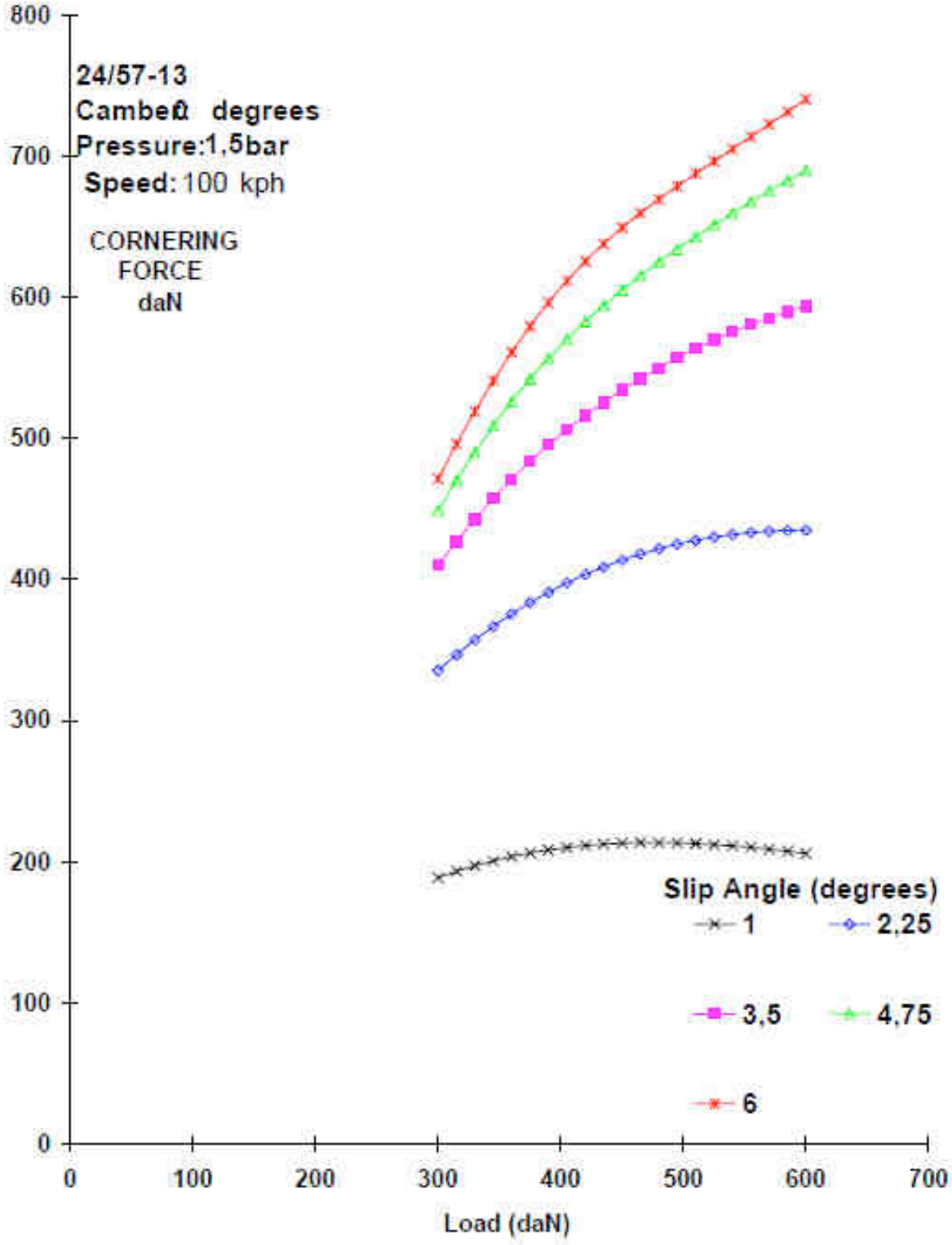

20/54-13
Camber0 degrees
Pressure:1,5bar
Speed: 100 kph
CORNERING
FORCE
daN
800
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
Load (daN)
Slip Angle (degrees)
1
2,25
3,5
4,75
6

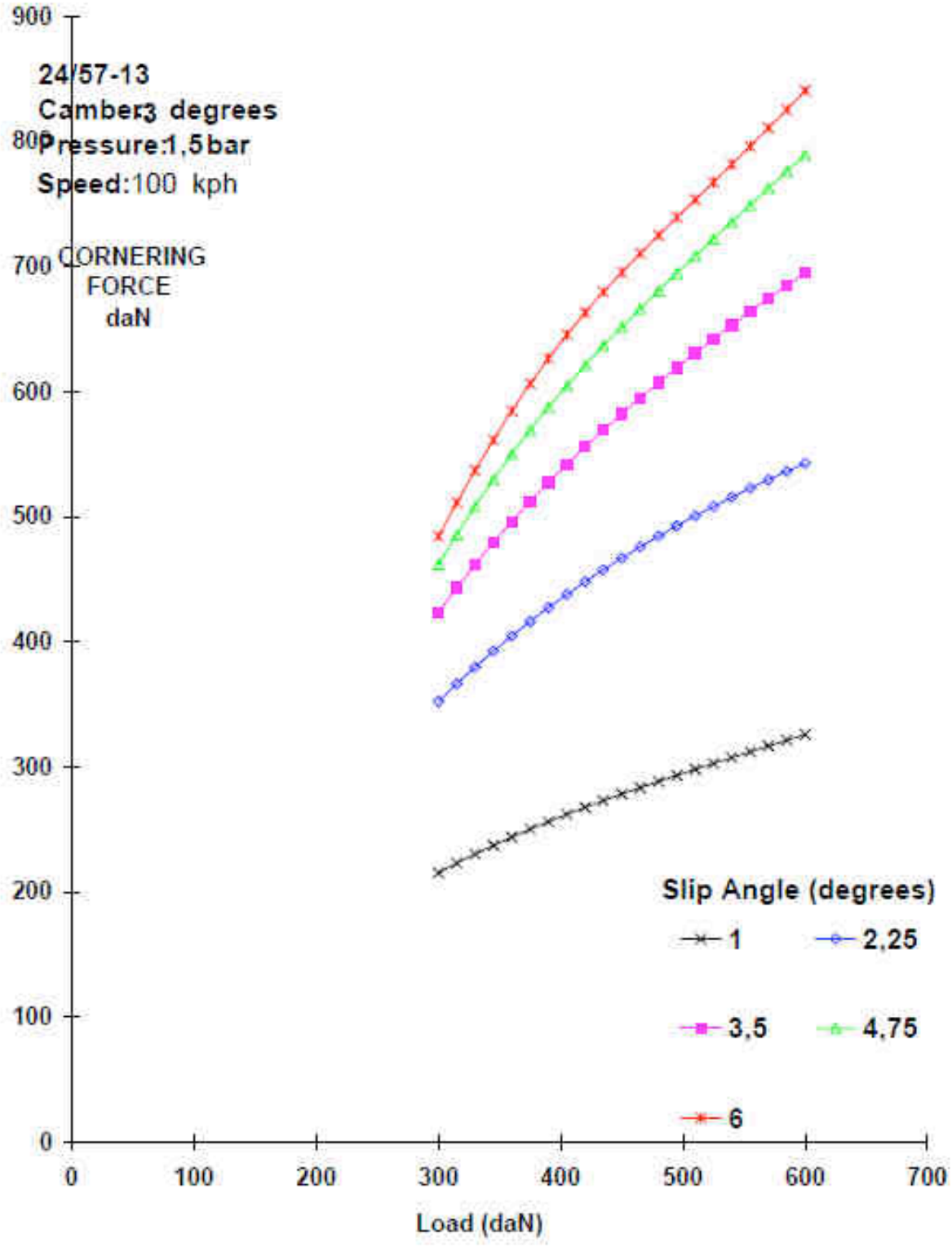

20/54-13
Camber:3 degrees
Pressure:1,5 bar
Speed:100 kph
CORNERING
FORCE
daN
900
800
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
Load (daN)
Slip Angle (degrees)
1
2,25
3,5
4,75
6

## 5.2. 24/57-13 Arrière



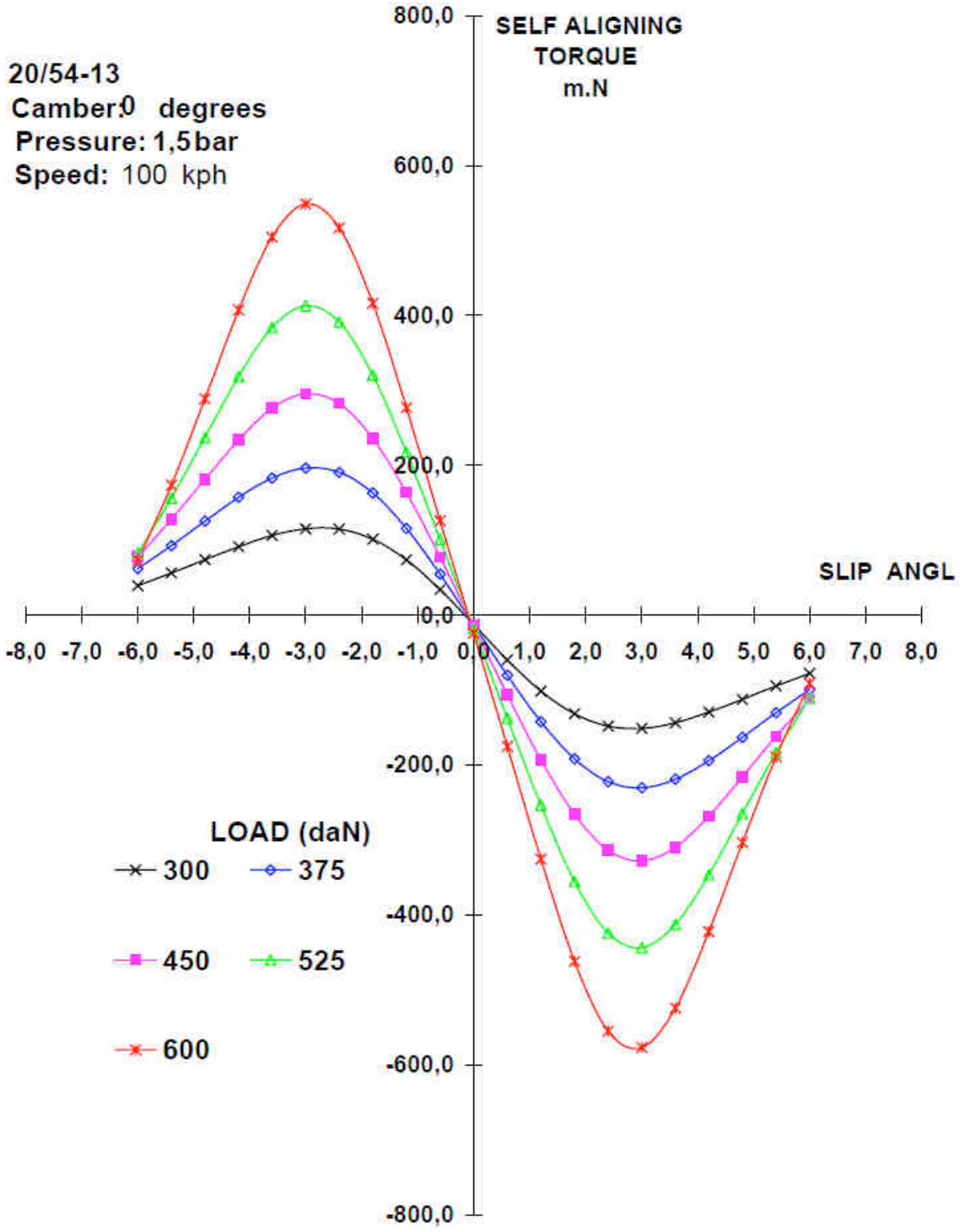

24/57-13
Camber:-3 degrees
Pressure:1,5 bar
Speed: 100 kph
CORNERING FORCE daN
1000
800
600
400
200
0
-200
-400
-600
-800
-8,0
-6,0
-4,0
-2,0
0,0
2,0
4,0
6,0
8,0
SLIP ANGLE
LOAD (daN)
300
375
450
525
600

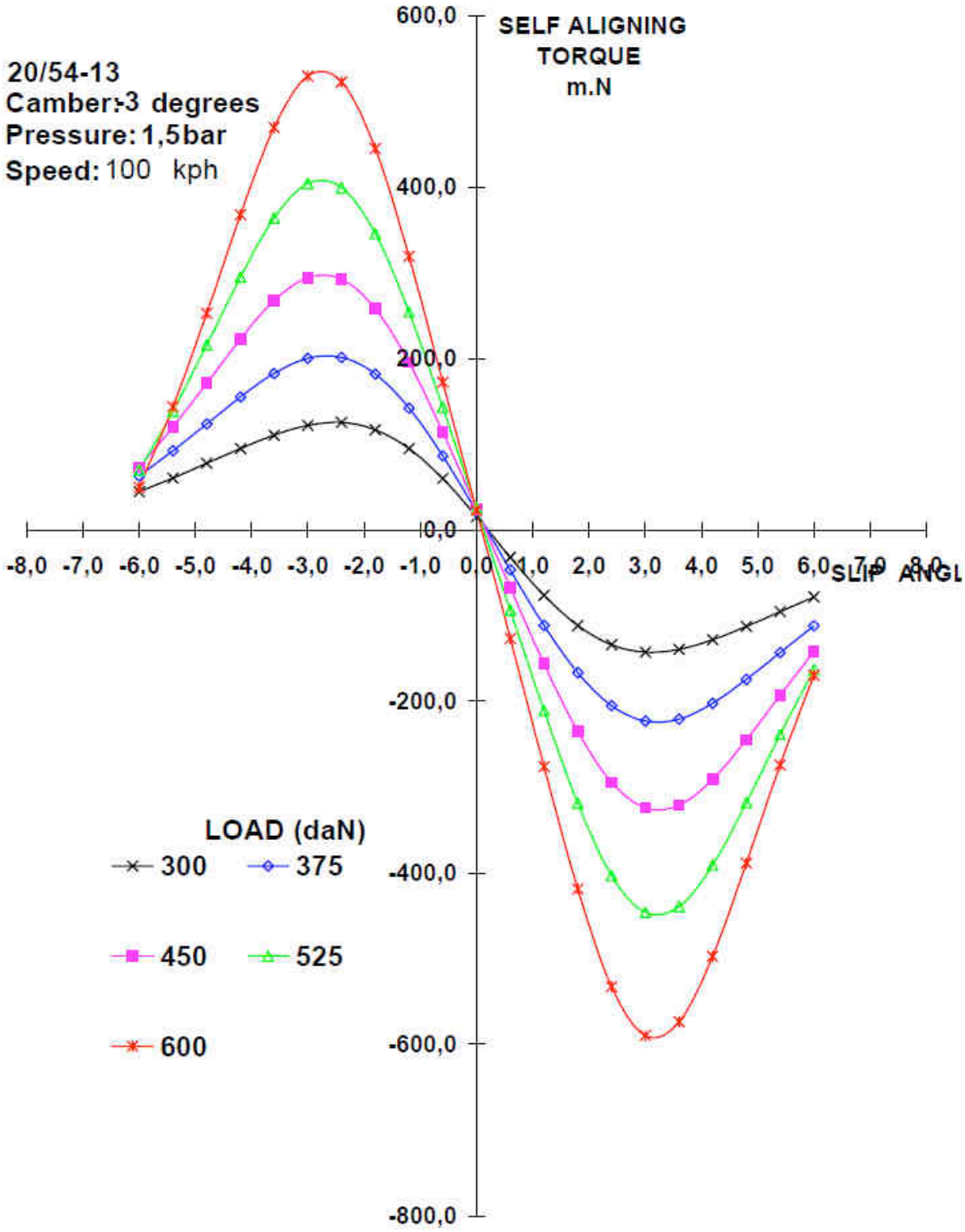

24/57-13
Camber0 degrees
Pressure:1,5bar
Speed: 100 kph
CORNERING
FORCE
daN
800
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
Load (daN)
Slip Angle (degrees)
1
2,25
3,5
4,75
6

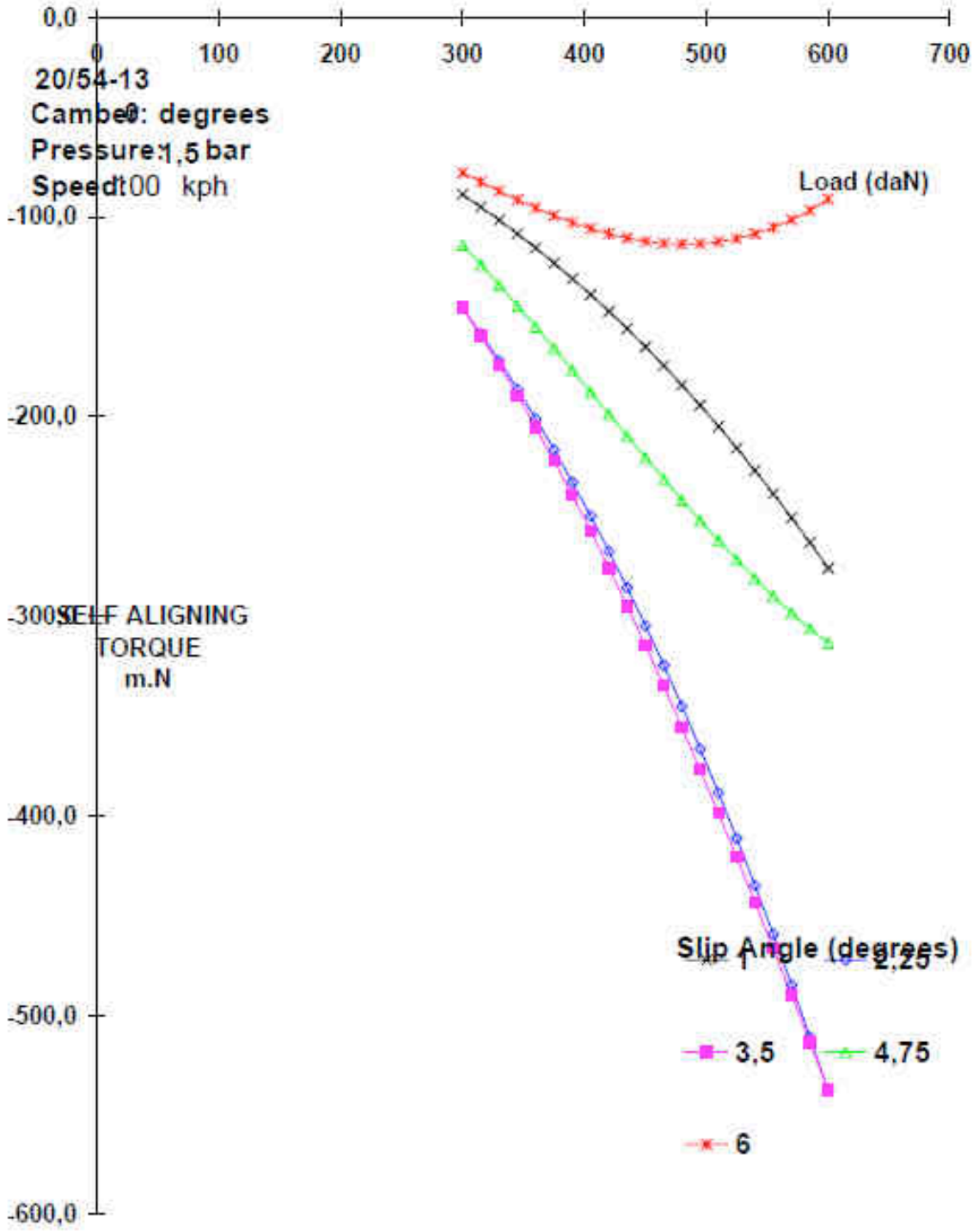

24/57-13
Camber:3 degrees
Pressure:1,5 bar
Speed:100 kph
CORNERING FORCE daN
900
800
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
Load (daN)
Slip Angle (degrees)
1
2,25
3,5
4,75
6

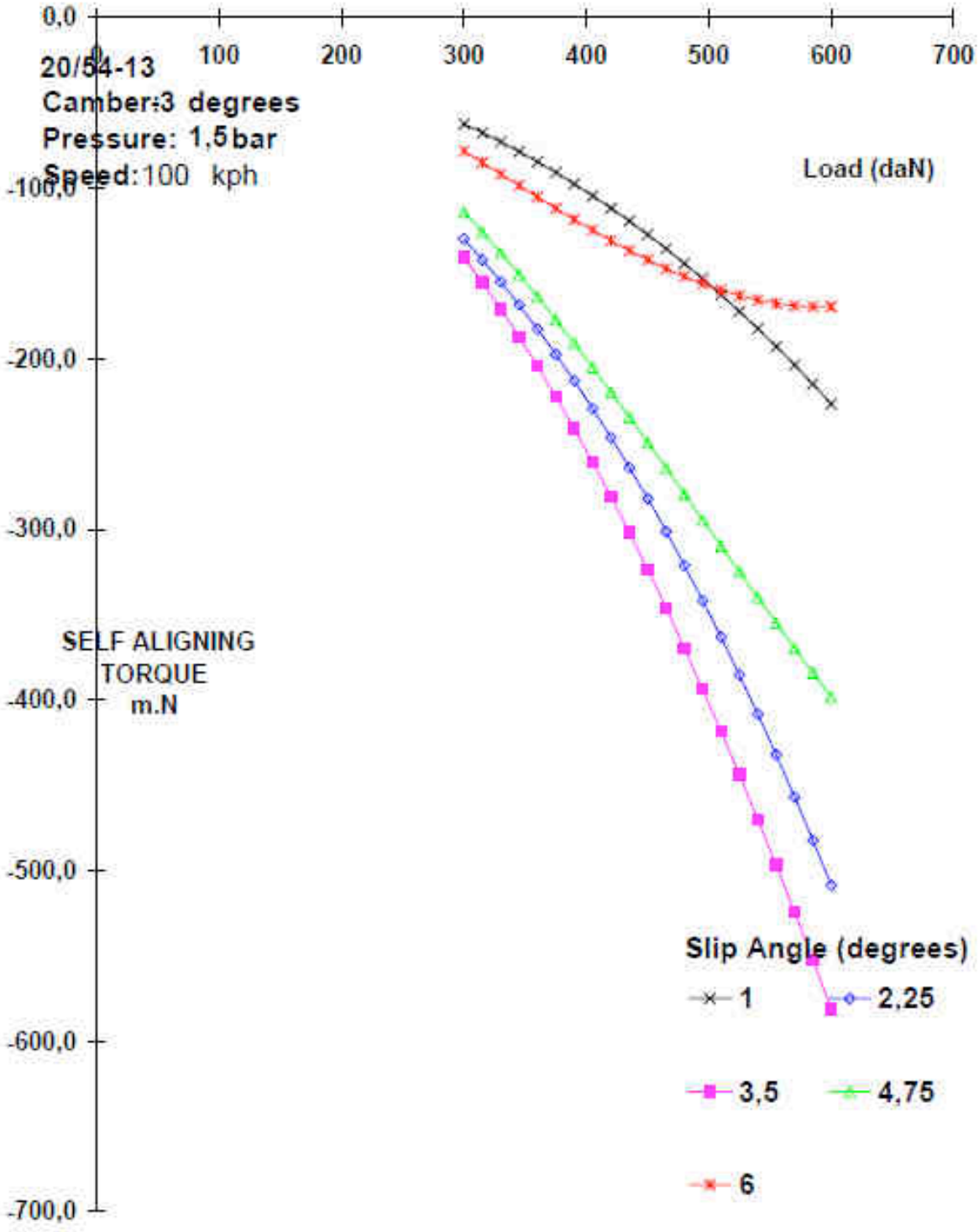
# 6. COUPLE D'AUTO-ALIGNEMENT

## 6.1. 20/54-13 Avant

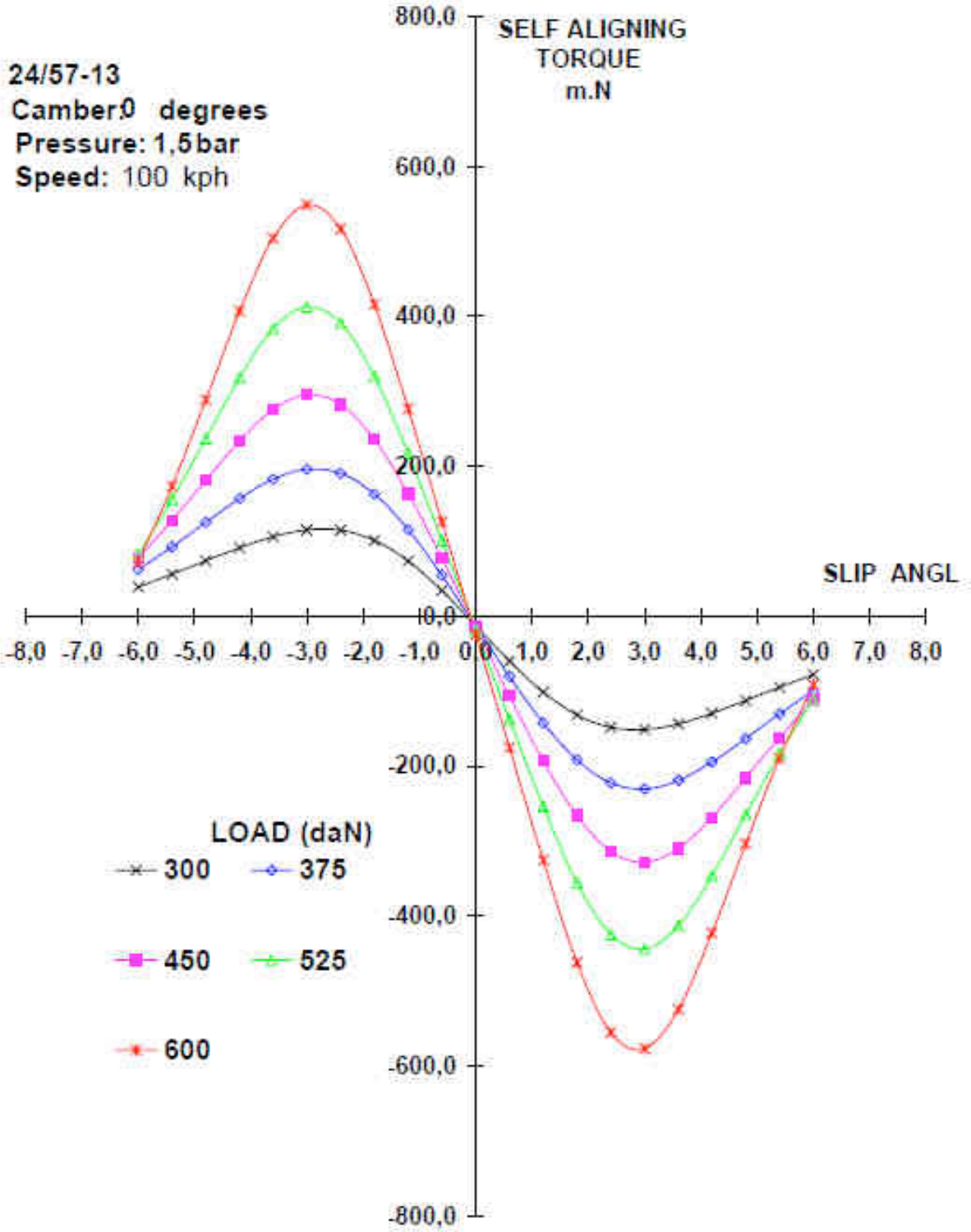


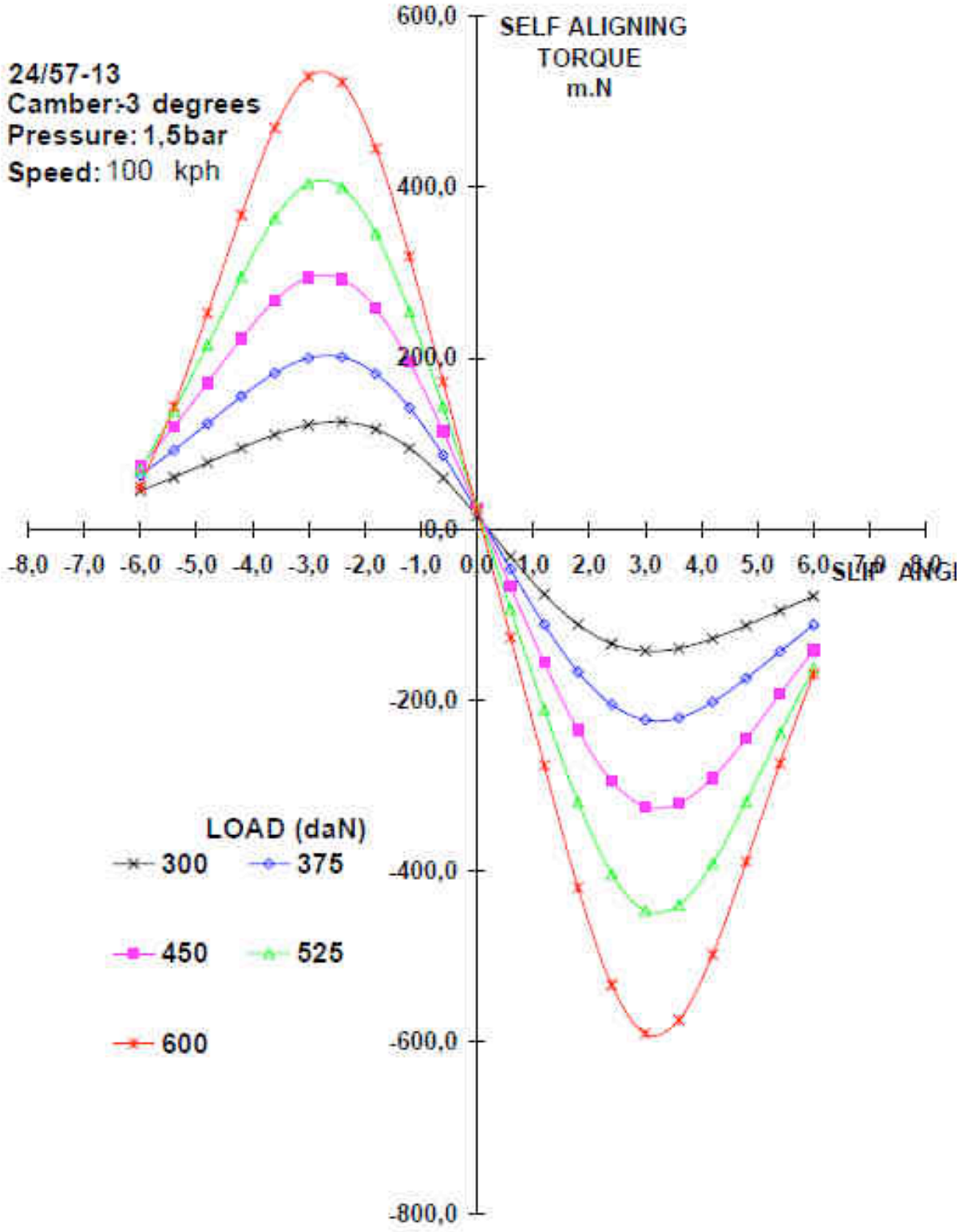

20/54-13
Camber:-3 degrees
Pressure: 1,5bar
Speed: 100 kph
SELF ALIGNING
TORQUE
m.N
600,0
400,0
200,0
0,0
-200,0
-400,0
-600,0
-800,0
-8,0 -7,0 -6,0 -5,0 -4,0 -3,0 -2,0 -1,0 0,0 1,0 2,0 3,0 4,0 5,0 6,0 7,0 8,0
SLIP ANGL
LOAD (daN)
300
375
450
525
600

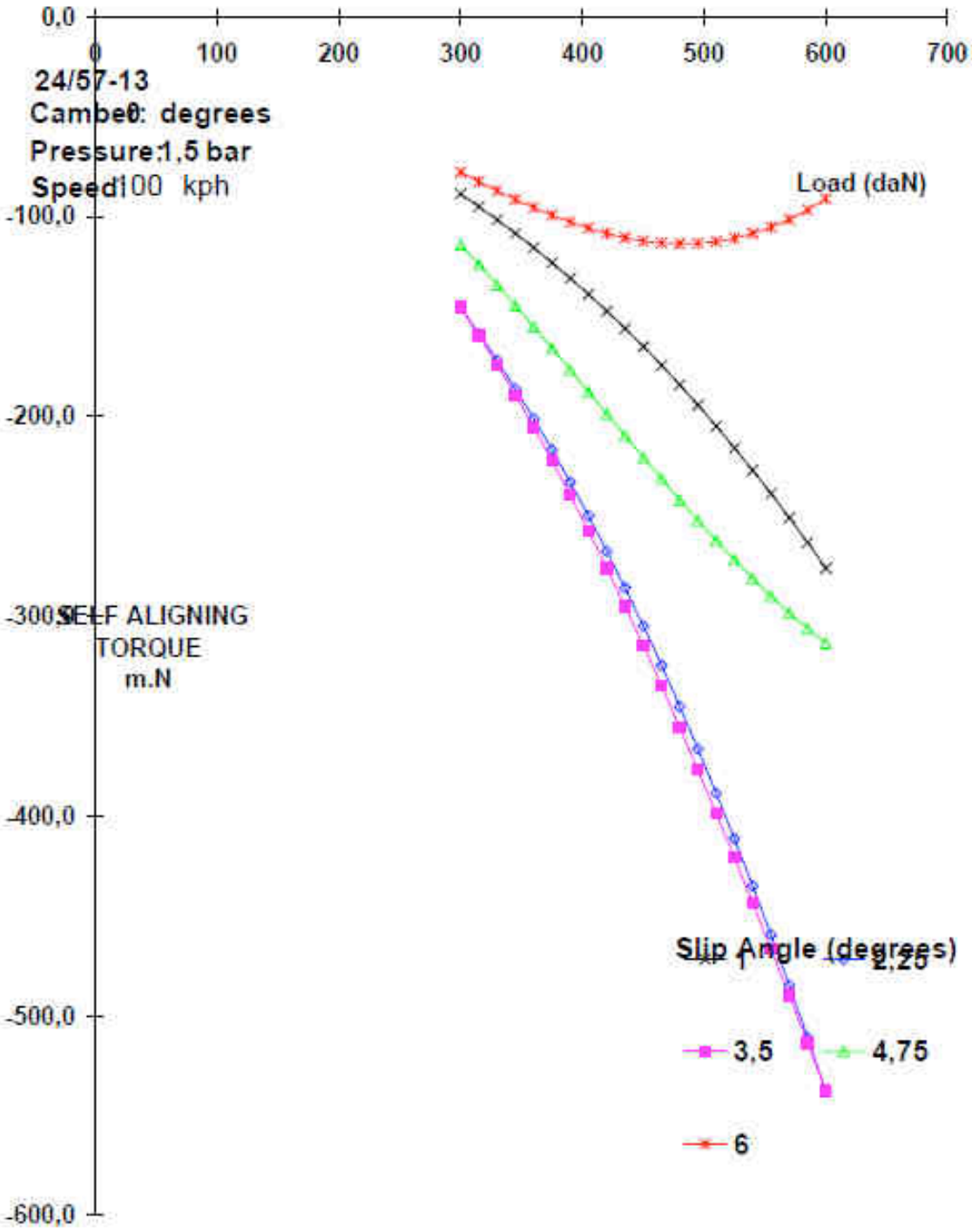

0,0
0
100
200
300
400
500
600
700
20/54-13
Camber: degrees
Pressure: 1,5 bar
Speed: 100 kph
Load (daN)
-100,0
-200,0
-300,0
SELF ALIGNING
TORQUE
m.N
-400,0
-500,0
-600,0
Slip Angle (degrees)
1
2,25
3,5
4,75
6

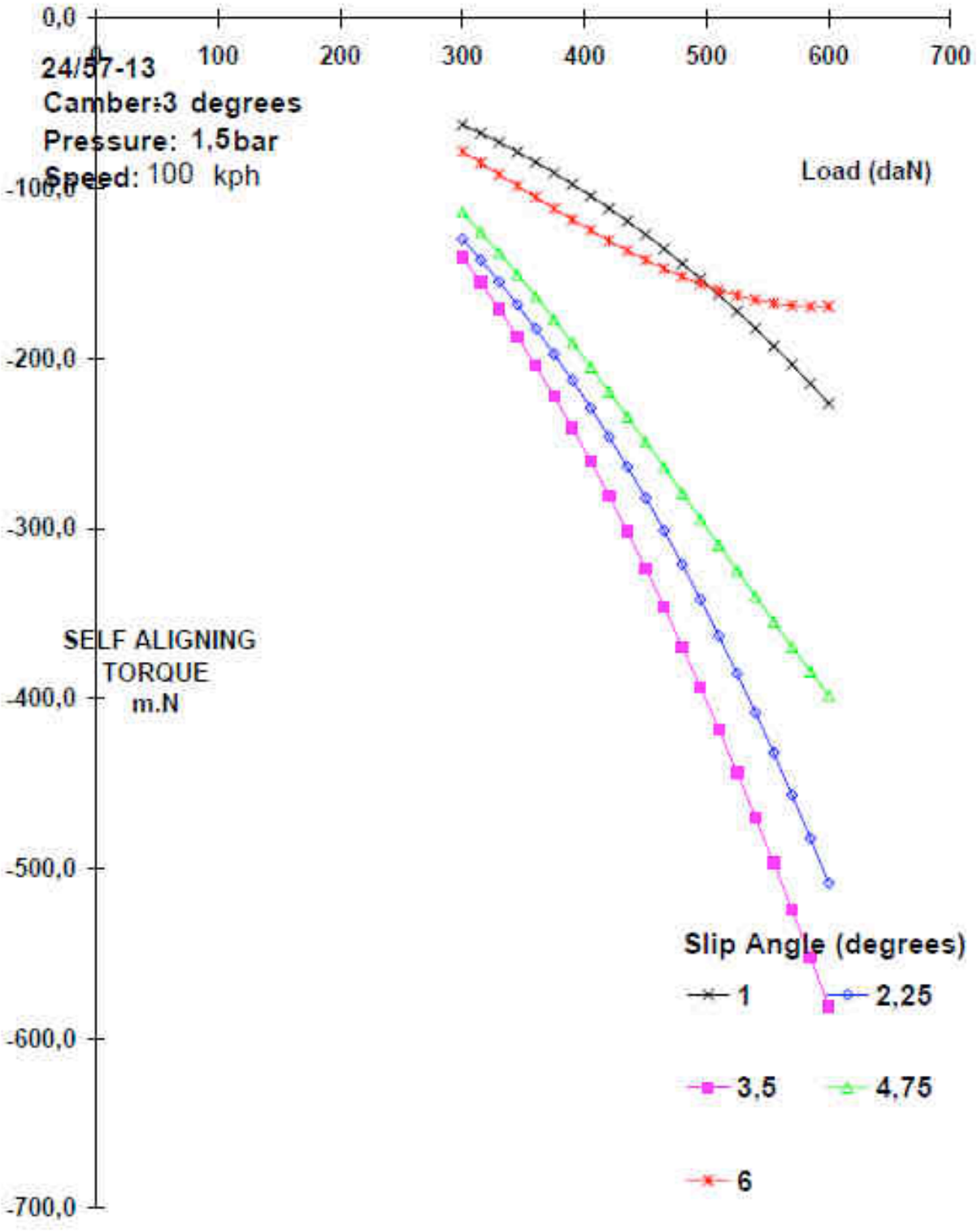

0,0
-100,0
-200,0
-300,0
-400,0
-500,0
-600,0
-700,0
0
100
200
300
400
500
600
700
20/54-13
Camber:3 degrees
Pressure: 1,5 bar
Speed:100 kph
Load (daN)
SELF ALIGNING
TORQUE
m.N
Slip Angle (degrees)
1
2,25
3,5
4,75
6

## 6.2. 24/57-13 Arrière



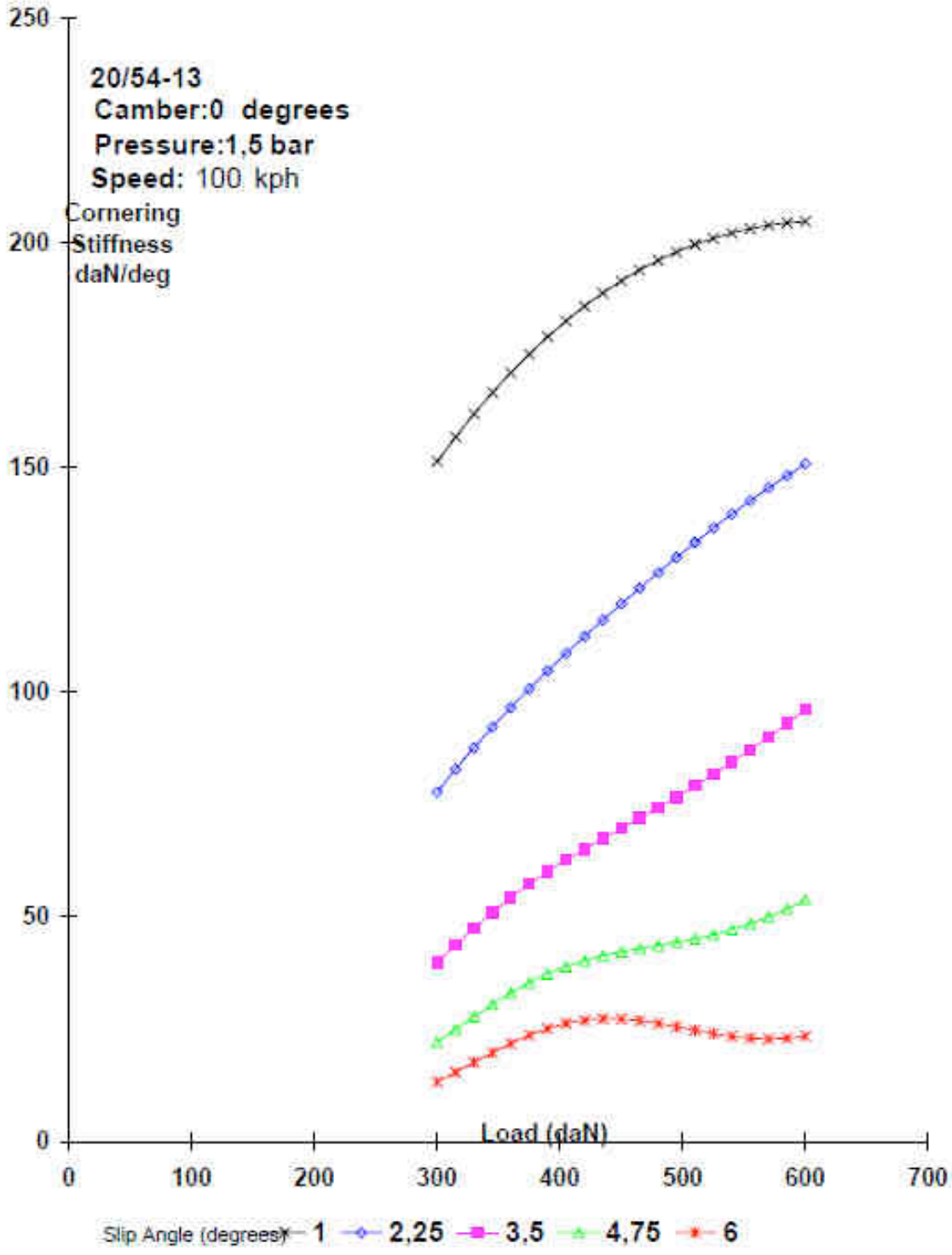

24/57-13
Camber:-3 degrees
Pressure: 1,5bar
Speed: 100 kph
SELF ALIGNING
TORQUE
m.N
600,0
400,0
200,0
0,0
-200,0
-400,0
-600,0
-800,0
-8,0 -7,0 -6,0 -5,0 -4,0 -3,0 -2,0 -1,0 0,0 1,0 2,0 3,0 4,0 5,0 6,0
SLIP ANGL
LOAD (daN)
300
375
450
525
600

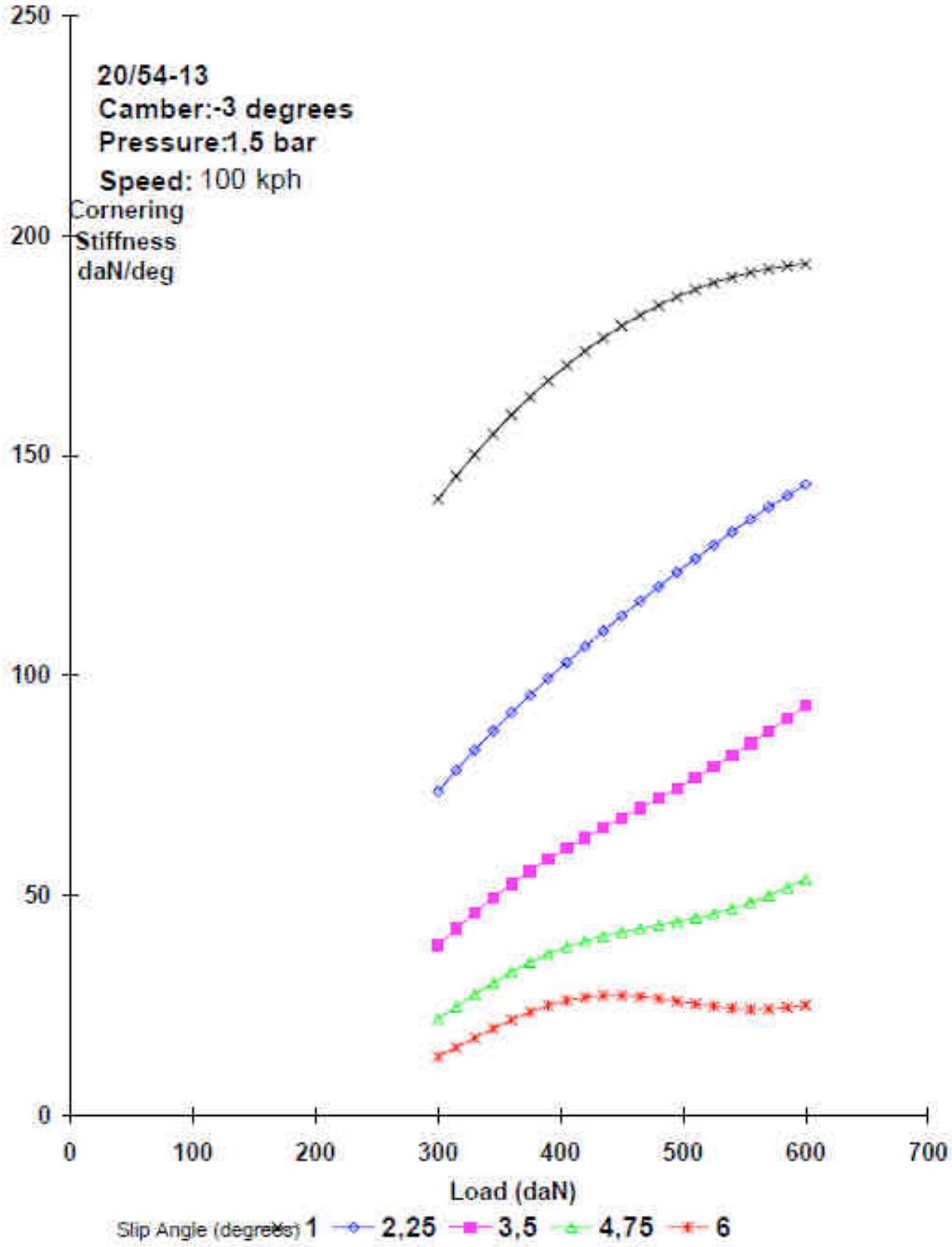

0,0
0
100
200
300
400
500
600
700
24/57-13
Camber: degrees
Pressure:1,5 bar
Speed:100 kph
Load (daN)
-100,0
-200,0
-300,0
SELF ALIGNING
TORQUE
m.N
-400,0
-500,0
-600,0
Slip Angle (degrees)
1
2,25
3,5
4,75
6


0,0
100
200
300
400
500
600
700
24/57-13
Camber:-3 degrees
Pressure: 1,5bar
Speed: 100 kph
Load (daN)
-100,0
-200,0
-300,0
SELF ALIGNING
TORQUE
m.N
-400,0
-500,0
-600,0
-700,0
Slip Angle (degrees)
1
2,25
3,5
4,75
6

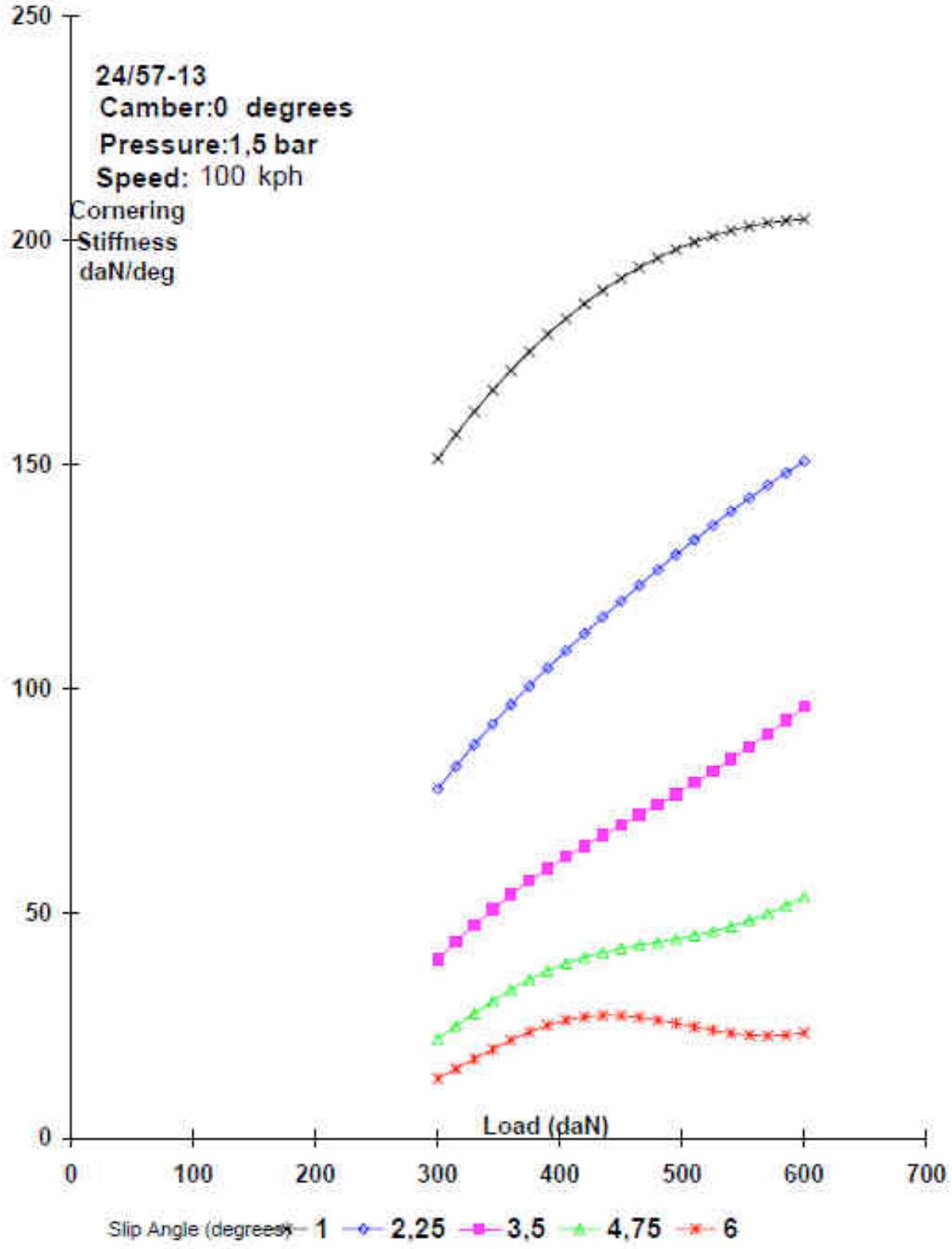
# 7. RIGIDITE DE DERIVE

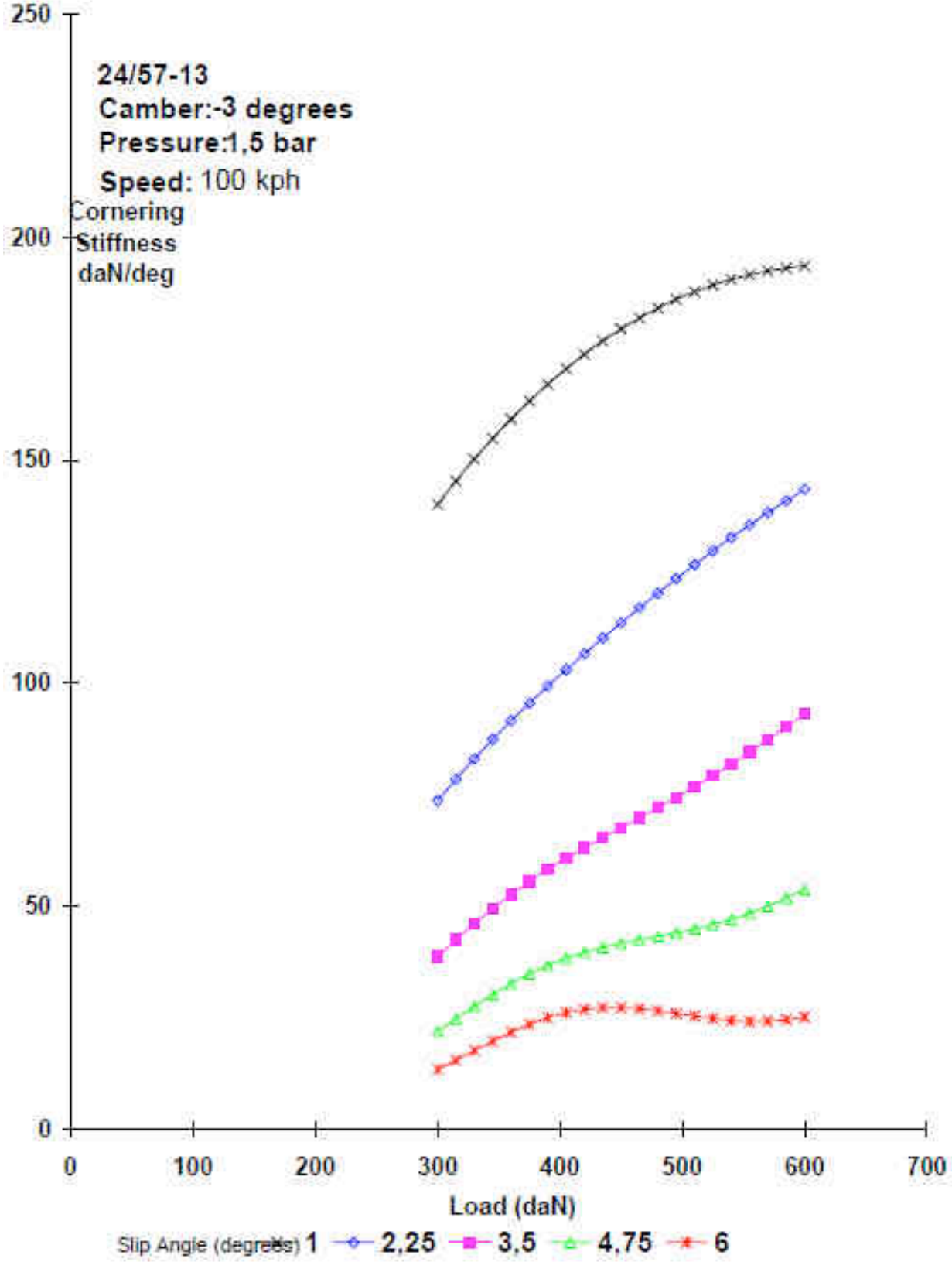
## 7.1. 20/54-13 Avant




20/54-13
Camber:-3 degrees
Pressure:1,5 bar
Speed: 100 kph
Cornering Stiffness daN/deg
250
200
150
100
50
0
0
100
200
300
400
500
600
700
Load (daN)
Slip Angle (degrees) 1
2,25
3,5
4,75
6

## 7.2. 24/57-13 Arrière




24/57-13
Camber:-3 degrees
Pressure:1,5 bar
Speed: 100 kph
Cornering
Stiffness
daN/deg
250
200
150
100
50
0
0
100
200
300
400
500
600
700
Load (daN)
Slip Angle (degrees) 1
2,25
3,5
4,75
6