ND Truck Weight Education

Leanna Emmer, NDLTAP Technical Resource Representative
Legal Vehicle Weights

Axle Configuration

Bridge Length

Tire Width
Legal Gross Vehicle Weight

State Highway System
- 105,500 pounds
- Unless otherwise posted

Local Road System
- 80,000 pounds
- Unless designated otherwise

Interstate System
- 80,000 pounds
- With interstate permit, up to 105,500 pounds
Axle Configuration

• Single Axle
  – Up to 20,000 pounds
    • Number of tires/axle
Axle Configuration

- **Tandem Axle**
  - Up to 34,000 pounds
    - Up to 19,000 pounds/axle-state/local roads
    - Up to 17,000 pounds/axle-interstate system
Axle Configuration

• Group of 3 or more axles
  – Up to 48,000 pounds – state/local roads
    • Up to 19,000 pounds/axle
  – Determined by bridge length – interstate system
    • Up to 17,000 pounds/axle

> 40” axle center to consecutive axle center

> 40 inches  > 40 inches
Tire Width – Linear and Metric

11 means 11 inches

295 millimeters
295 divided by 25.4 = 11.6 inches
Tire Width

• 550 pounds per inch of **tire width**
  - Number of tires per axle

• 550 x 2 tires x 11” tire width = 12,100 pounds

• 550 x 4 tires x 11” tire width = 20,000 pounds
Exception

Steering Axle

• Axle Rating
• Interstate System
• Up to 20,000 pounds
## North Dakota Axle Weight Limitations - Tire Width

<table>
<thead>
<tr>
<th>Tire Width</th>
<th>Single Axle (2 Tires)</th>
<th>Single Axle (4 Tires)</th>
<th>Tandem Axle (4 Tires)</th>
<th>Tandem Axle (8 Tires)</th>
<th>Triple Axle (6 Tires)</th>
<th>Triple Axle (12 Tires)</th>
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**NOTE:** Axle weights may be reduced during the spring breakup season or on otherwise posted highways. Axle weights may be reduced by Bridge Load Limitations Map.
### Bridge Length – Federal Bridge Formula

<table>
<thead>
<tr>
<th>Measurement from axle center to axle center</th>
<th>Used to determine allowable gross weight on an axle group(s) and vehicle/vehicle combination</th>
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</table>

#### On interstate system
- Interior and exterior bridge length are used to determine gross vehicle weight

#### On state/local roads
- Exterior bridge length is used to determine gross vehicle weight
Bridge Length – Interstate System

- 12’9”
- 4’5”
- 41’1”
- 4’6”
- 4’3”
- 8’9”
- 17’4”
- 54’3”
- 67’
Bridge Length – State/Local Roads

12’9”  4’5”  41’1”  4’6”  4’3”  67’
Elements – Axle/Gross Weights

State/Federal Law

Axle Configuration
  • Number of Tires/Axle

Tire Width
  • Steering axle rating, interstate

Bridge Length
  • Distance axle center to consecutive axle center
Manual Process

Axle wt: 12100#
tire width: 11" 
axle config:
# of tires:
axle spacings

Bridge length

17' = 49000#
46100

41' = 69500#
68000#

53' = 81000#
80,100#
http://dotsc.ugpti.ndsu.nodak.edu/TWC/ND Truck Weight Calculator

ND Truck Weight Calculation Results

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Given Information for Weight Calculator

<table>
<thead>
<tr>
<th>Highway Type</th>
<th>Interstate Highway</th>
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<tr>
<td>Axle Count</td>
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Truck Info

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<th>Unit Name</th>
<th>AGC</th>
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<tr>
<td>Year/Make</td>
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<td>Customer or Company Name</td>
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</table>

Axle Details - Weights

**Legal GVVW - Interstate:** 80,100 lbs.

The maximum legal gross vehicle weight for this vehicle/vehicle combination.

Maximum gross weight legal on axle #2 through the rearmost trailer axle shall not exceed 68,000 lbs.

Weight (per bridge length chart): 81,000 lbs.

Truck image with the Axle Group Number above axle group and Axle Number below each axle.

Distances (the linear measurement from axle center to consecutive axle center) are shown below the axle numbers of the truck image.

A black-centered wheel denotes two tires per axle and a white-centered wheel denotes four tires per axle.

Axle Group Weights

<table>
<thead>
<tr>
<th>Axle Group Number</th>
<th>Axle Number(s) in Group</th>
<th>Legal Axle Group Weight</th>
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<tbody>
<tr>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>4 - 5</td>
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QUESTIONS?

ND Local Technical Assistance Program
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