

**CITY OF SAN ANGELO****ITEM 213****ROLLING (PNEUMATIC TIRE)****213.1 DESCRIPTION.**

This Item shall govern for the compaction of embankment, flexible base, surface treatments, or pavements by the operation of approved pneumatic tire rollers as herein specified and as directed by the City.

**213.2 EQUIPMENT.**

(1) **General.** When used on seal coats, asphaltic surface treatments and bituminous mixture pavements, the roller shall be self-propelled and equipped with smooth tread tires whether “Rolling (Light Pneumatic Tire)” or “Rolling (Medium Pneumatic Tire)” is specified on the plans. The roller shall be so constructed as to be capable of being operated in both a forward and a reverse direction.

When used on bituminous mixture pavements, the roller shall have suitable provisions for moistening the surface of the tires while operating.

Where turning is impractical or detrimental to the work, and when specifically directed by the City, the roller shall be capable of being operated in a forward or backward motion.

In lieu of the rolling equipment specified, the Contractor may, upon written permission from the City, operate other compacting equipment that will produce equivalent relative compaction in the same period of time as would be expected of the specified equipment, as determined by the City, its use shall be discontinued and the Contractor will be required to furnish the specified equipment.

(2) **The Light Pneumatic Tire Roller.** It shall consist of not less than nine pneumatic tired wheels, running on axles in such manner that the rear group of tires will cover the entire gap between adjacent tires of the forward group, and mounted in a rigid frame and provided with a loading platform or body suitable for ballast loading. The front axle shall be attached to the frame in such manner that the roller may be turned within a minimum circle. The pneumatic tire roller under working conditions shall have an effective rolling width of approximately sixty inches and shall be so designed that by ballast loading, the total load may be varied uniformly from 9,000 to 18,000 pounds. The roller shall be equipped with tires that will afford ground contact pressures of 45 pounds per square inch (p.s.i.) or more. The operating load and tire air pressure shall be within the range of the manufacturer’s charts or tabulations showing the contact areas and contact pressures for the full range of tire inflation pressures and for the full range of loadings for the particular tires furnished. The roller under working conditions shall provide a uniform compression under all wheels. Individual tire inflation pressures shall be within plus or minus five (5) p.s.i. of each other. The pneumatic tire roller shall be drawn by either a suitable crawler type tractor, a pneumatic tired tractor or a truck of adequate tractive effort, or may be of the self-propelled type,

and the roller, when drawn or propelled by either type of equipment, shall be considered a light pneumatic tire roller unit.

**(3) The Medium Pneumatic Tire Roller (Type A).** It shall consist of not less than seven (7) pneumatic tired wheels, running on axles in such manner that the rear group of tires will cover the entire gap between adjacent tires of the forward group, and mounted in a rigid frame and provided with a loading platform or body suitable for ballast loading. The front axle shall be attached to the frame in such manner that the roller may be turned within a minimum circle. The pneumatic tire roller under working conditions shall have an effective rolling width of approximately 84 inches and shall be so designed that by ballast loading the total load may be varied uniformly from 23,500 to 50,000 pounds. The roller shall be equipped with tires that will afford ground contact pressures to 80 p.s.i. or more. The operating load and tire air pressure shall be within the range of the manufacturer's chart as approved by the City. The roller under working conditions shall provide a uniform compression under all wheels. Individual tire inflation pressures shall be within plus or minus five (5) p.s.i. of each other.

The pneumatic tire roller shall be drawn by either a suitable crawler-type tractor, a pneumatic tired tractor or a truck of adequate tractive effort, or may be of the self-propelled type; and the roller, when drawn or propelled by either type of equipment, shall be considered a medium pneumatic tire roller unit. The power unit shall have adequate tractive effort to properly move the operating roller at variable uniform speeds up to approximately five (5) miles per hour.

**(4) The Medium Pneumatic Tire Roller (Type B).** It shall conform to the requirements for Medium Pneumatic Tire Roller, Type A as specified in Subarticle 213.2, except that the roller shall be equipped with tires that will afford ground contact pressures to 90 p.s.i. or more.

### **213.3 CONSTRUCTION METHODS.**

This work shall be done only when directed by the City. The embankment layer or the base course shall be sprinkled if directed, and rolling with a pneumatic tire roller shall start longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least one-half (1/2) of the width of the pneumatic tire roller. On superelevated curves, rolling shall begin at the low sides and progress toward the high sides. Alternate trips of the roller shall be slightly different in length. Rolling shall continue until discontinued by the City.

The light pneumatic tire roller shall be operated at speeds directed by the City which shall be between four (4) and twelve (12) miles per hour for asphalt surfacing work and between two (2) and six (6) miles per hour for all other work.

The medium pneumatic tire roller shall be operated at speeds as directed by the City.

Sufficient rollers shall be provided to compact the material in a satisfactory manner. When operations are so isolated from one another that one roller unit cannot perform the required compaction satisfactorily, additional roller units shall be provided.

**213.4 MEASUREMENT.**

When shown on the plans to be a pay item, this Item will be measured by the actual hours the pneumatic tire roller unit works as directed by the City.

**213.5 PAYMENT.**

The cost of furnishing and operating the equipment in accordance with this Item will not be paid for directly but will be considered subsidiary to the various bid items of the contract, unless this Item is specified as a pay item in the contract. When pneumatic rolling is specified as a pay item, the equipment furnished and operated in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Rolling (Light Pneumatic Tire)", "Rolling (Medium Pneumatic Tire) (Type A)" or "Rolling (Medium Pneumatic Tire) (Type B)". This price shall be full compensation for furnishing and operating all equipment, and for all labor, fuel, tools, and incidentals necessary to satisfactorily perform the work.