

CD54

Vibratory Asphalt Compactor

CATERPILLAR®



Cat® 3054C DIT Engine

Max. Gross Power	74.5 kW/101 hp
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Operating Weight w/ROPS/FOPS Cab

Operating Weight	9500 kg/10 900 kg
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Compaction Width

Drum Width	1700 mm
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Max. Compaction Width	3000 mm
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CD54 Features

Reliable Water Spray System

Spray bar operation with continuous or intermittent mode gives the operator flexibility to conserve water, yet perform well in the most unfavorable operating conditions.

Application Versatility

The combination of the versatile Cat vibratory system and wide offset drum lets you configure your machine to precisely match job requirements.

Smooth Working Powertrain

The liquid cooled Cat® 3054C DIT engine offers more power, while responsive controls and smooth operation build operator confidence.

Comfortable Operation

Low operator sound levels, cool operating environment and good visibility provide a high level of comfort.

Ease of Operation

The unique steering control provides sensitive to the touch operation that enhances operator control and reaction to obstructions.

Simplified Services

The Electronic Control Modules (ECMs) provide easy diagnostic capability.



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The Cat® CD54 Drum Steer Asphalt Compactor offers a versatile vibratory system that produces results on all types of asphalt mix. From tender to harsh mixes, this Cat asphalt compactor delivers the right amount of force to get density without compromising smoothness or productivity. The front and rear split drums, wide offset feature, optimum maneuverability, power, and reliable water spray system deliver unmatched performance in adverse conditions. The operating station provides the comforts and all-around visibility that you’ve come to expect from Caterpillar. Excellent visibility to the drum edges for precise control when operating against obstacles and matching joints.

Performance

Compactor design delivers unmatched versatility.

Meeting density and smoothness specifications can often be challenging. Caterpillar® understands this, and designs asphalt compactors that simplify operation, yet provide versatility to perform in all types of applications. Having the right equipment and understanding its capability will help you meet those performance requirements for every situation that you encounter.

Superior Mat Finish

Maneuverability and dealing with tight corners is a common challenge for all asphalt compactors. Maneuvering on the mat to finish a pass or follow a radius can often result in tearing the surface. The Cat® CD54 with split drum design, permits tight turns and significantly reduces tearing so the operator is free to concentrate on pattern accuracy and keeping up with the paver.

Vibratory Selection

Selecting the amplitude that provides the correct force and selecting the frequency that matches paving speed are critical to successful asphalt compaction. Cat® asphalt compactors offer vibratory systems with dual amplitudes and frequencies. Vibratory versatility and the knowledge to use it are fundamental and part of the Caterpillar solution.

Keeping the Drum Surface Wet

Keeping the drum wet is critical to all asphalt compactors. The high capacity water spray system offers triple filtration and optimum flow for excellent performance.

Power and Efficiency

Having enough power to perform on inclines and maintaining the desired impact spacing when changing directions is essential to asphalt compaction. The Cat® 3054C DIT engine combines the power to excel in tough conditions with the fuel efficiency to continue operating throughout the day.

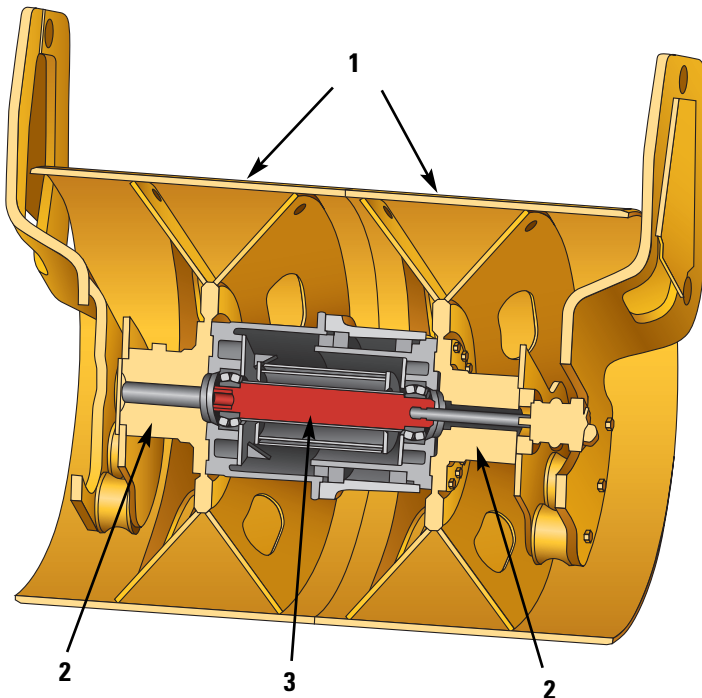
Matching Paving Speed

Keeping pace with the paver ensures that compaction takes place in the desired temperature zone. Choosing the right drum width that effectively covers the mat, while matching the vibratory frequency with the speed of the paver, leads to consistent mat quality.



Vibratory System

Effective performance on a variety of applications.



Exclusive Pod Design

The exclusive axle-type pod design utilises tapered roller bearings that support each drum half and eliminates any potential for contact between the two halves. Dual seals provide two layers of protection that prevent contamination and ensure long-term performance. Oil bath lubrication delivers continuous recirculation of oil inside the sealed housing, leading to longer service intervals and lower operating costs.

Dual Amplitude/Dual Frequency

Dual amplitude settings work efficiently in a wider range of applications. A switch at the operator station changes amplitude and frequency is adapted. This simple setup eliminates the guess-work associated with vibratory selection.

Automated Vibratory Control

An auto-vibe function allows the operator to determine when the vibratory system should engage upon starting out or when changing direction. Automatic vibration start-up and shut-off helps produce smooth, flawless mats. This function also has a manual control for start-and-stop work.

- 1 Split Drum
- 2 Propel Hydraulic Motor
- 3 Vibratory System

Water Spray System

The Cat spray system provides redundancy in the system, ensuring reliable performance that keeps the machine on the mat.

Hours of Operation

The single, 750 liter water tank provides hours of operation between refills. Spray can be set on continuous for maximum wetting action or intermittent for maximum duration between fill-ups. The sloping design provides excellent machine visibility to the drum while the single fill point can be accessed from the left side of the machine.

Excellent Filtration

Keeping the spray nozzles free of foreign particles is essential to asphalt compaction. The Cat system provides triple filtration that minimizes clogs. The filters are highly accessible and can be quickly removed for cleaning without the use of special tools, limiting machine downtime.

Long-Life Pumps

Dual water pumps provide the necessary flow to the spray nozzles. During operation the pump usage alternates with the direction of travel so that only one pump operates at a time. Alternating pump usage extends the operational life, while lowering replacement costs.



Split Drums

Superior mat finish with Caterpillar split drums



Tight Turning Without Tearing

An inside turning radius of 2.8 meters significantly increases the maneuverability of this high production asphalt compactor. An effective split drum propel system lets you use the tight turning radius without damaging the hot mat.

Wide Drum Offset

The 1.3 meter drum offset provides more coverage for higher production on thin mats while minimizing heat loss prior to compaction. Ease of operation is provided through fingertip control at the propel lever for one handed operation. An audio alarm alerts the operator when the drums are aligned, allowing the operator to concentrate on mat conditions.

Heavy-duty Design

The thick steel fabrication used in production provides a strong, solid frame that resists flexing and holds up to the tough operating conditions of asphalt compaction. The heavy-duty construction optimizes vibratory efficiency by directing vibration into the mat, not through the machine frame as wasted energy. The frame features a unique center beam design that provides easy access to engine and other main components. The robust front and rear hitch articulation include maintenance free tapered roller bearings that are sealed and greased for life, leading to reduced service requirements and lower life-time operating costs.

Steering

Wide offset capability provides high production work.

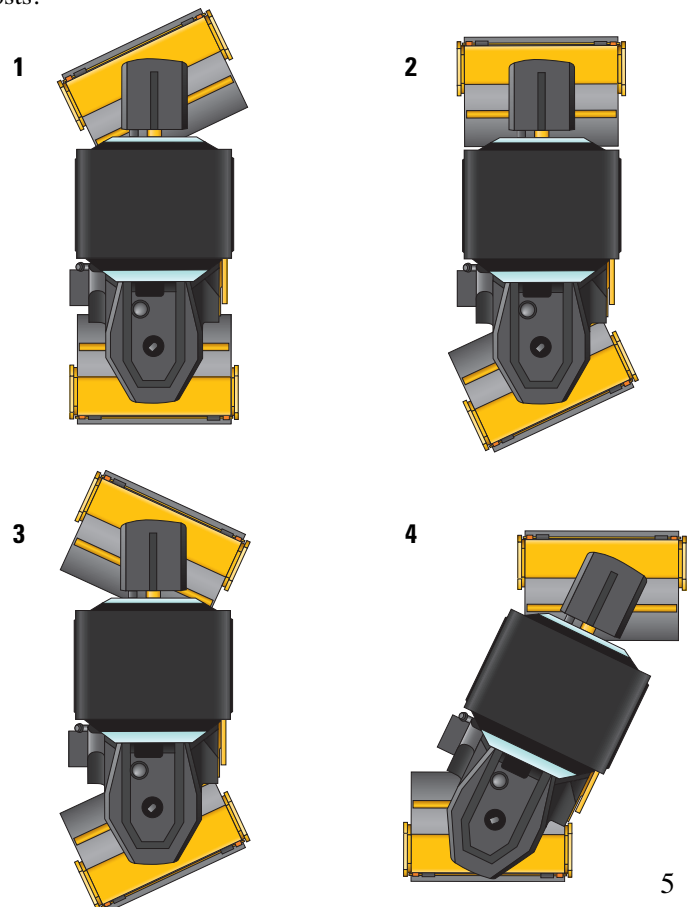
Four Steering Modes

The CD54 features four steering modes: front, rear, coordinated front and rear and crab operation. Coordinated steering produces a 2.8 meter inside turning radius for maximum jobsite maneuverability.

Sensitive To The Touch Steering

The benefit of electronic steering is combined with the feel of hydraulic steering. When the drum encounters resistance, friction to the steering wheel increases, providing an intuitive feel that is extremely beneficial when operating adjacent to vertical barriers and curbs or when the drum articulation reaches the end of travel during tight turns.

- 1 Front Steering
- 2 Rear Steering
- 3 Coordinated Steering
- 4 Crab Operation (when in the maximum drum offset position the front drum still has a $\pm 5\%$ steering angle).





Powertrain

Smooth control and quiet operation leads to higher productivity.

Cat Engine

The 4-cylinder Cat 3054C Direct Injection Turbo (DIT) engine provides clean, quiet operation while delivering superior performance and durability. The 74.5 kW (101 hp) rated gross power engine meets EU directive 97/68/EC Stage II emission requirements.

Balanced Torque and Proportional Speed Control

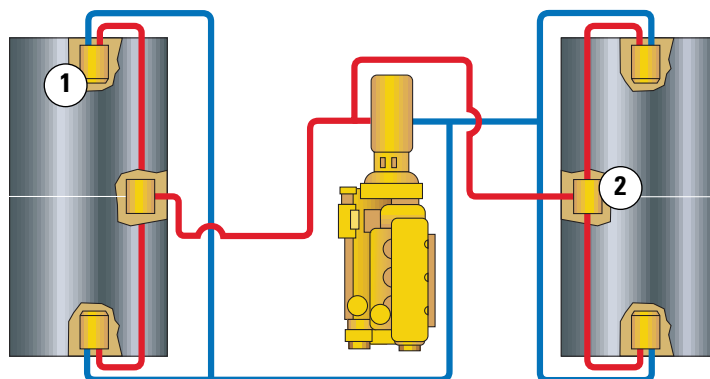
The split drum drive system features an electronically actuated traction control that prevents unequal rotation of the drum halves and assures balanced torque when going straight. To avoid tearing the mat in tight turns, the drum halves need to rotate at different speeds. The split drum drive system utilizes maintenance-free tapered roller bearings, for excellent reliability. The system also features speed sensing propel motors that allow additional flow to the outside drum drive, ensuring proportional speed between the drum halves. The proportional speed is controlled by the steering angle and the ECM controller to ensure balanced torque when turning.

- 1 Four hydraulic motors with integrated parking brakes.
- 2 Hydraulic flow divider valves providing balanced flow to front and rear motors.

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Smooth Operation

Responsive controls generate operator confidence and improve productivity. When in control, operators are able to stay focused on mat conditions, allowing them to make the necessary adjustments throughout the day. To accomplish this, the machine uses an electronic control module (ECM) that monitors the propel system in order to optimise performance.



Operating Environment

Superior comfort keeps you productive all day long.



All-Around Visibility

Keeping operators alert of their surroundings and aware of the machine and mat conditions is a focus of the operating station. The ROPS/FOPS cab with full floor-to-ceiling glass on the front and rear corners provides an unobstructed line of sight to the drum edges, drum surfaces, and both sides of the machine. The right hand window can be easily opened for additional side visibility when required. Good all-around visibility enables the operator to optimize water spray performance and compaction coverage when operating in the offset steering mode.

Comfortable Seating

Keeping the job site in clear view is important when working close to the paver. The multi-position seating provides a variety of adjustments that help the operator stay focused and in control. A tilting steering column and multiple seat adjustments allow the operator to customize weight, height, armrests, and the backrest to suit their individual needs.

Automatic Speed Control (ASC)

A speed control dial used in conjunction with the propel lever provides a cruise control type feature that allows the operator to meet the required speed to keep pace with the paver. By moving the propel lever to full forward or to full reverse allows the machine to travel at the speed determined by the adjustable dial.

Convenient Controls

At Caterpillar, we strive to build machines that accommodate operators with all types of skill level. We understand that providing machines that perform well regardless of skill level can lead to greater productivity. Convenient layout and easy-to-understand controls build operator confidence. Being able to locate controls and understand their function allows operators to work more effectively, leading to better performance and higher productivity.

Serviceability

Easy access and minimal maintenance requirements keep your machine on the job.



Convenient features make service easy

- Routine service points are accessible from ground level.
- Swing-out doors provide access to filters and components.
- Extended service intervals reduce downtime and increase machine availability.
- Access to cab and water spray fill with three-point contact and anti-slip steps.
- Maintenance-free hitch design provides unmatched reliability.
- Tapered roller bearings in the split drum and articulation joints are sealed for life requiring no grease or service.
- Electronic control modules (ECM) for the propel and vibratory systems are compatible with other Cat compactors, making diagnostic efforts quick and easy.
- Electrical system uses Deutsch connectors and colour-coded and numbered wiring for easy reference when troubleshooting.
- Sight gauges let you easily check radiator coolant and hydraulic oil levels as-well-as engine air filter restriction.
- Standard pressure ports allow quick diagnosis of the entire hydraulic system.
- Optional bio-oil capability offers an environmentally friendly alternative to standard oil.

Customer Support

Unmatched support makes the difference!

Your Cat dealer is ready to assist you with your purchase decision and everything after.

- Make comparisons of machines with estimates of component life, preventative maintenance and cost of production.
- Financing packages are flexible to meet your needs.
- Your Cat dealer can evaluate the cost to repair, rebuild and replace your machine, helping you can make the right choice.
- For more information on Cat products, dealer services and industry solutions, visit us at www.cat.com.



CD54 Asphalt Vibratory Compactor Specifications

Engine

Model: Cat® 3054C DIT, 4 cylinder liquid cooled engine rated at 2200 rpm

Rated Power

Net: ISO 9249 and 80/1269/EEC	72 kW / 98 hp
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Gross: ISO 14396	74.5 kW / 101 hp
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Max. Power

Net: ISO 9249 and 80/1269/EEC	72 kW / 98 hp
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Gross: ISO 14396 and SAE J1995	74.5 kW / 101 hp
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Bore	105 mm
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Stroke	127 mm
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Displacement	4.4 L
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- Net Power ratings are tested at the reference conditions for the specified standard.
- Net power shown is the power available at the flywheel when the engine is equipped with alternator, air cleaner, muffler and fan at minimum speed.
- No derating required up to 3000 m altitude. Auto derate protects hydraulic and transmission systems.
- The Cat 3054C DIT engine meets Stage II off-highway emission regulations.

ROPS/FOPS

- Cat cab with integrated Rollover Protective Structure (ROPS/FOPS) is standard.
- ROPS meets ISO 3471:1994.
- FOPS meets ISO 3449:1992 Level II.

Transmission

Variable displacement piston pump supplies pressure flow to single speed hydraulic motors driving each of the four split drums. A single propel lever located besides the operator seat provides smooth hydrostatic control of the machine's infinitely variable speed in both forward and reverse.

The Automatic Speed Control (ASC) system is a hydraulic control device allowing precise operating speed to be preset and maintained without further adjustment. ASC system also makes machine starts and stops smoother.

Three propel modes can be selected from the operator console; work, roading and high.

Speeds

Work	0-7 km/h
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Travel	0-9 km/h
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Sound

Operator Sound

The operator sound pressure level measured according to the procedures specified in ISO 6394:1998 is 83 dB(A), for cab offered by Caterpillar, with doors and windows closed.

Exterior Sound

As manufactured by Caterpillar, this machine's exterior sound power level at 107 dB(A) meets the criteria spelled out in the European Directives noted on the certificate of conformance and the accompanying labeling.

Steering

Electric over hydraulic with active steering feedback feature. This feature provides a unique operation sensitivity when at end of stroke or maneuvering close to vertical obstacles.

Minimum turning radius

Inside drum edge	2800 mm
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Outside drum edge	4500 mm
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Articulation angle (at each drum)	25°
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Oscillation angle	± 8°
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Max drum offset	1300 mm
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Brakes

Service Brake Feature

Closed-loop hydrostatic drive system provides dynamic braking during operation.

Secondary and Parking Brake Features

Spring-applied/hydraulically released brake on front and rear drums. Actuated by switch on console or automatically when pressure is lost in brake circuit or when engine is shut off or in the event of a major fault detection by the machine ECM. A manual release pump is included.

Braking system meets EN 500.

CD54 Asphalt Vibratory Compactor Specifications

Instrumentation

The instrument panel is located in front of the operator and contains the speedometer, vibrate tachometer, vibration mode selector, water spray system controls, light switches, hour meter, alternator indicator light, fuel gauge, warning lights and horn. An audible alarm sounds and warning light illuminates if abnormal conditions occur in engine oil pressure, engine coolant temperature or charge pressure. Operational lights are also positioned on the instrument panel. They illuminate if the vibratory system, drum spray system, neutral or parking brake are engaged.

Machine controls are also located to the operator's right on the control console. These controls include the start switch with cold-start aid, electric throttle, propel lever, speed selector switch, automatic speed control (ASC) dial, drum steering selector switch, horn and secondary/parking brake switch. Drum spray switch and vibration switch are on propel handle. Offset steering controlled by thumb switch located on propel handle for simple operation.

Drum Spray System

Entire drum spray system is corrosion-proof and includes a large water tank with a single fill port and drain valve.

Self-adjusting spring-loaded scrapers located on the front of each split drum and two scrapers fitted behind the split drums prevent material build-up and keep the drums clean. The heavy-duty springs and molded polyurethane design maintain consistent pressure across the entire drum width in order to maximize scraper wear.

Spray can be set on continuous for maximum wetting action or intermittent for maximum duration between fill-ups. The "Auto" selection pulls water from one pump traveling forward and from the other pump while traveling backward. The water spray system automatically shuts off when the machine is in neutral.

Water capacity	750 l
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Vibratory System

Drum width	1700 mm
Drum diameter	1200 mm
Drum shell thickness	17 mm
Weight at front drum (ROPS cab)	4655 kg
Weight at rear drum (ROPS cab)	4845 kg
Eccentric weight drive	Hydraulic direct
Weight distribution front/rear	50/50 %
Vibratory frequency	53/42 Hz
Amplitudes	
High	0.62 mm
Low	0.34 mm
Centrifugal force per drum	
High	84 kN
Low	74.5 kN

Service Refill Capacities

	liter
Fuel tank	160
Cooling system	28
Engine oil w/filter	9
Hydraulic system (including hoses)	82
Hydraulic tank	49
Vibratory bearing lubrication (per drum)	8

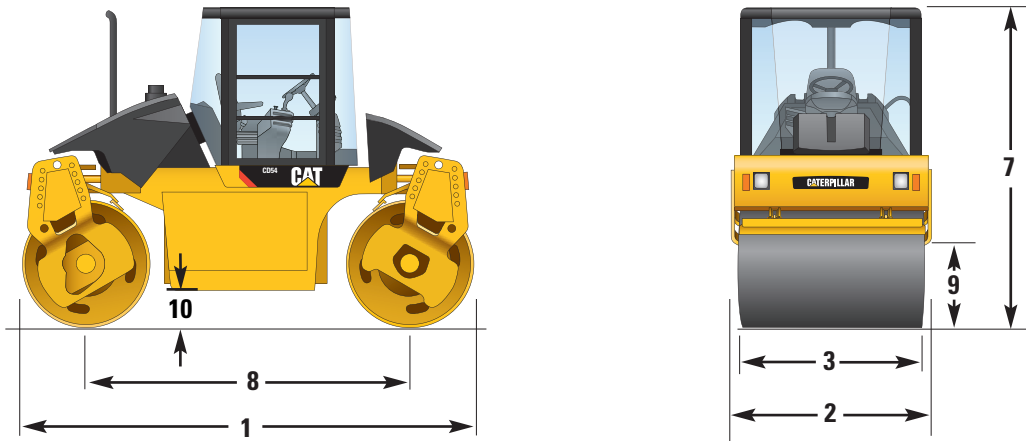
Standard Equipment

- Front and Rear Split Drum
- Dual Amplitude and Frequency Vibratory System
- Sealed Pod Style Vibratory System
- 1300 mm Drum Offset
- ROPS/FOPS Cab
- Two-speed Hydrostatic Transmission
- Automatic Traction Control
- Locking Engine Compartment and Cab
- Vandalism Guard on Lights
- Triple Filtered Water System
- 750 L Water Capacity
- 12V Electrical System
- 80 A Alternator

CD54 Asphalt Vibratory Compactor Specifications

Dimensions

All dimensions are approximate.



	mm
1 Overall length	4270
2 Overall width	1873
3 Drum width	1700
Drum offset	1300
Drum shell thickness	17
Drum diameter	1200
7 Overall height at ROPS/FOPS	3042
8 Wheelbase	3070
9 Curb clearance	777
10 Ground clearance	372

Optional Equipment

- Air Conditioning
- Bio-Degradable Oil
- Freeze Protection Kit (Water Supply)
- Mirrors
- Sunscreen
- Warning Beacon
- Water Distribution Mats (Cocoa)
- Water Distribution Mats (Rubber)
- Product Link
- Recording Module
- Edge Cutter
- Chip Spreader Ready
- Weight Kit (Maximum Operating Weight 10 900 kg)
- EC Certificate

Operating Weights

Standard weight (CECE)	9500 kg
Maximum machine weight (CECE)	10 900 kg
Static linear load (at drum)	28 kg/cm
Maximum static linear load (at drum)	32 kg/cm ^(*)

^(*) Meets NFP 98736 class: VT1

Maximum machine weight includes all attachments, full fluids and an 80 kg operator.

Standard operating weights include lubricants, coolant, 80 kg operator, half full fuel tank, full hydraulic system and half full water tank.

CD54 Asphalt Vibratory Compactor

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com

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Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Caterpillar dealer for available options.

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