

Calculated Industries 4325

Calculated Industries HeavyCalc Pro Model 4325 Construction Math Calculator User Manual

For Engineers, Estimators, Excavators, Highway Contractors, and Heavy Equipment Operators

1. INTRODUCTION

The Calculated Industries HeavyCalc Pro Model 4325 is a specialized construction math calculator designed for professionals in excavation and heavy construction. This tool simplifies complex calculations related to dimensions, areas, volumes, and loads in both Imperial and metric formats. It assists in tasks such as determining truck load volumes, calculating percent grade and slope, and estimating cut and fill quantities. This manual provides detailed instructions for the proper setup, operation, and maintenance of your HeavyCalc Pro calculator.

2. KEY FEATURES

- **Dirt-Math Specific Functions:** Designed for excavation and heavy construction, including truck load volumes, percent grade, and slope calculations.
- **Enhanced Problem Solving:** Automatically calculates areas, volumes, and loads. Features for swell, shrink, grid-cell, and cut/fill estimates, plus weight per volume.
- **Multi-Unit Conversion:** Works in and converts between feet-inch-fractions, decimal (tenths, hundredths), yards, meters, centimeters, and millimeters.
- **Error Reduction:** Built-in cut/fill, bank, loose, and compact volume functions aid in accurate soil-volume estimates. The 'Proposed' key allows setting benchmarks or desired grades.
- **Time-Saving Utilities:** Includes a 'paperless tape' for reviewing previous entries, preference settings for fractions, repeat operator, and constant functions. A per-unit key helps estimate material costs.
- **Durable Design:** Comes with a rugged, shock, dust, and moisture-resistant Armadillo Gear protective case.

3. SETUP

3.1. Battery Installation

The HeavyCalc Pro calculator requires one CR2016 long-life battery (included). To install or replace the battery:

1. Carefully remove the battery compartment cover located on the back of the calculator.
2. Insert the CR2016 battery with the positive (+) side facing up.

3. Replace the battery compartment cover, ensuring it is securely fastened.

3.2. Initial Power On

Press the **On/C** button to power on the calculator. The display will show a clear screen or the last calculated value. If the display does not activate, ensure the battery is correctly installed.



Figure 3.2.1: Front view of the HeavyCalc Pro calculator, showing its display and key layout. The display currently shows a volume calculation of 40.10028 cubic yards.

4. OPERATING INSTRUCTIONS

4.1. Basic Operations

- **Power On/Clear:** Press **On/C** to turn on the calculator or clear the current entry.
- **Clear All:** Press **Clear All** to clear all entries and reset the calculator.
- **Off:** Press **Off** to turn off the calculator. The calculator also features an automatic shutoff to preserve battery life.

4.2. Dimensional Formats and Conversions

The HeavyCalc Pro allows you to work and convert between various dimensional formats, including feet-inch-fractions, decimal feet, yards, and metric units (meters, centimeters, millimeters).

1. Enter your measurement using the dedicated **Feet**, **Inch**, **Yds**, or **m** (meters) keys.
2. To convert, press the **Conv** key followed by the desired unit key.



Figure 4.2.1: The HeavyCalc Pro displaying a 'FILL' calculation in feet and inches (7 feet, 5 inches). This image highlights the dedicated function keys for various construction math problems.

4.3. Area and Volume Calculations

Use the **Length**, **Width**, and **Height** keys to calculate areas and volumes.

1. Enter the length, then press **Length**.
2. Enter the width, then press **Width**.
3. For area, the result will be displayed. For volume, enter the height, then press **Height**.

4.4. Weight Per Volume

To determine the weight per volume for specific materials:

1. Calculate the volume as described above.
2. Enter the material's weight, then press the **Cost wt/vol** key.

4.5. Right Angle Solutions (Grade, Slope, Square-Up)

The calculator provides instant solutions for right angle problems, including grade, slope, and square-ups.

- Use the **%Grade** and **Slope** keys for grade and slope calculations.
- The **Sq-Up** key assists in squaring up layouts.

4.6. Swell and Shrink Calculations

The HeavyCalc Pro can determine material swell and shrink percentages.

- Input the original volume and the new volume.
- Use the **%Swell** or **%Shrink** keys to calculate the respective percentages.

4.7. Cut/Fill Estimates

Simplify grid-cell and cut/fill estimates for earthmoving projects.

1. Enter the dimensions or volumes for cut and fill sections.
2. Press the **Cut/Fill** key to obtain estimates.

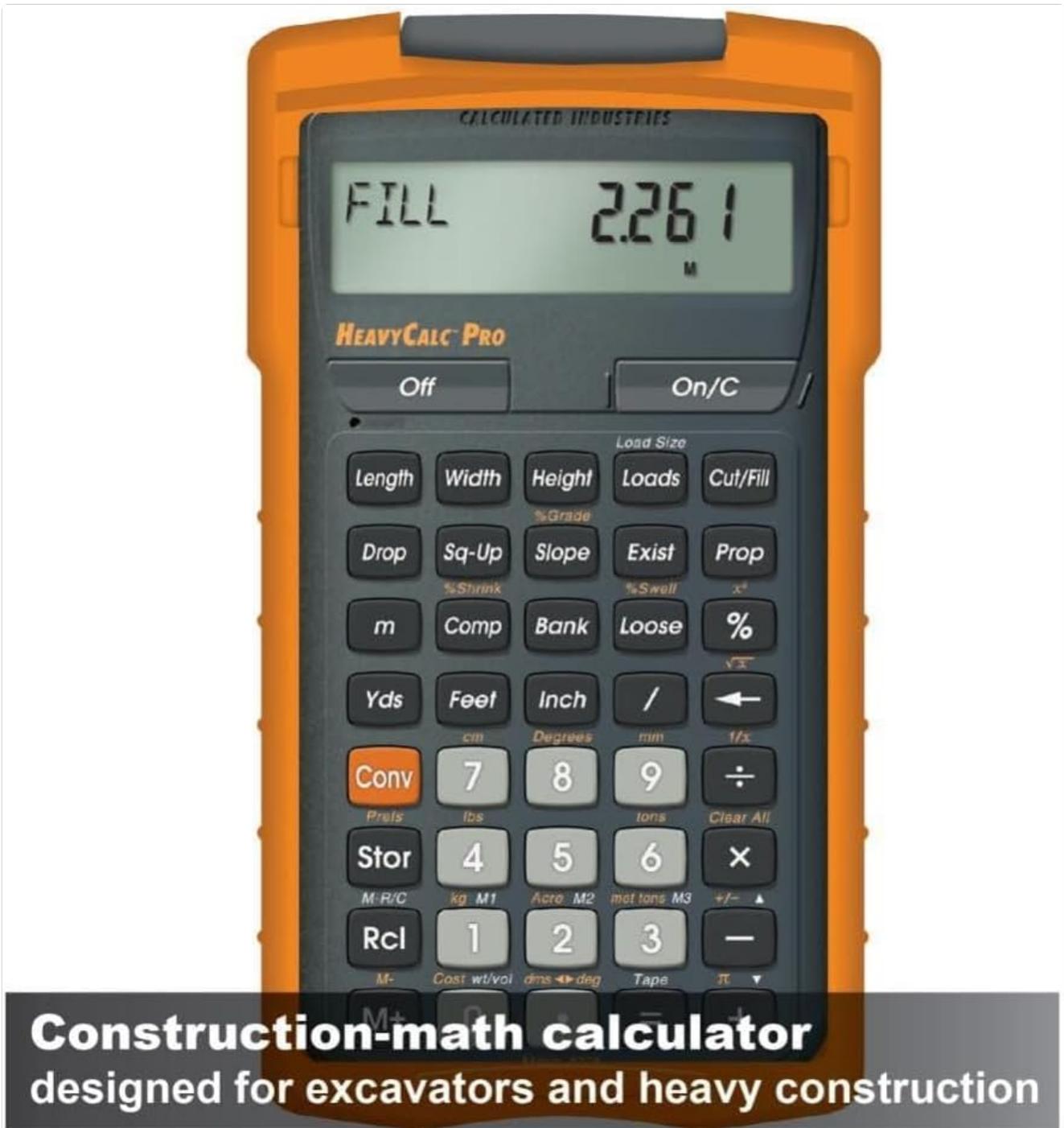


Figure 4.7.1: The HeavyCalc Pro displaying a 'FILL' calculation of 2.261 meters. This illustrates its capability for construction math calculations for excavators and heavy construction professionals.

4.8. Proposed Key Function

The **Prop** (Proposed) key allows you to set a benchmark or desired grade for a project, enabling the calculator to generate necessary calculations based on this reference.

4.9. Paperless Tape

The 'paperless tape' function allows you to review the previous 20 entries. This is useful for checking plans and confirming dimensions without needing to re-enter data. Access this feature using the **Tape** key.

4.10. Preference Settings

Customize calculator behavior, such as fraction display, using the **Prefs** key. Refer to the included Pocket Reference Guide for detailed preference options.

4.11. Per-Unit Key

The per-unit key facilitates material cost estimation. Enter the unit cost, then use this key in conjunction with volume or area calculations to determine total material expenses.

5. MAINTENANCE

5.1. Cleaning

To clean your HeavyCalc Pro, use a soft, dry cloth. For stubborn dirt, a slightly damp cloth with mild soap can be used, ensuring no liquid enters the calculator. Avoid abrasive cleaners or solvents.

5.2. Battery Replacement

When the display becomes dim or erratic, it is time to replace the battery. Follow the instructions in Section 3.1 for battery installation. Always use a fresh CR2016 battery.



Figure 5.2.1: The HeavyCalc Pro calculator with its rugged, shock-proof Armadillo Gear cover closed, demonstrating its protective design.

6. TROUBLESHOOTING

- **Calculator does not turn on:** Ensure the battery is correctly installed and is not depleted. Replace the battery if necessary.
- **Incorrect calculations:** Verify that the correct units are selected and that numbers are entered accurately. Use the 'paperless tape' to review entries.
- **Display is dim or blank:** Replace the battery.
- **Buttons are unresponsive:** Clean the calculator surface. If the issue persists, contact customer support.

7. SPECIFICATIONS

| Feature | Detail |
|------------------------|---|
| Model Number | 4325 |
| Dimensions (H x W x D) | 7 x 5 x 1 inches |
| Item Weight | 3.2 ounces |
| Power Source | Battery Powered |
| Battery Type | 1 x CR2016 Lithium Manganese Dioxide (included) |
| Display Style | LCD |
| Material | Plastic |
| Included Components | HeavyCalc Pro Calculator, CR2016 battery, Quick Reference Guide, Pocket Reference Guide (English/Spanish), Armadillo Gear Protective Case |

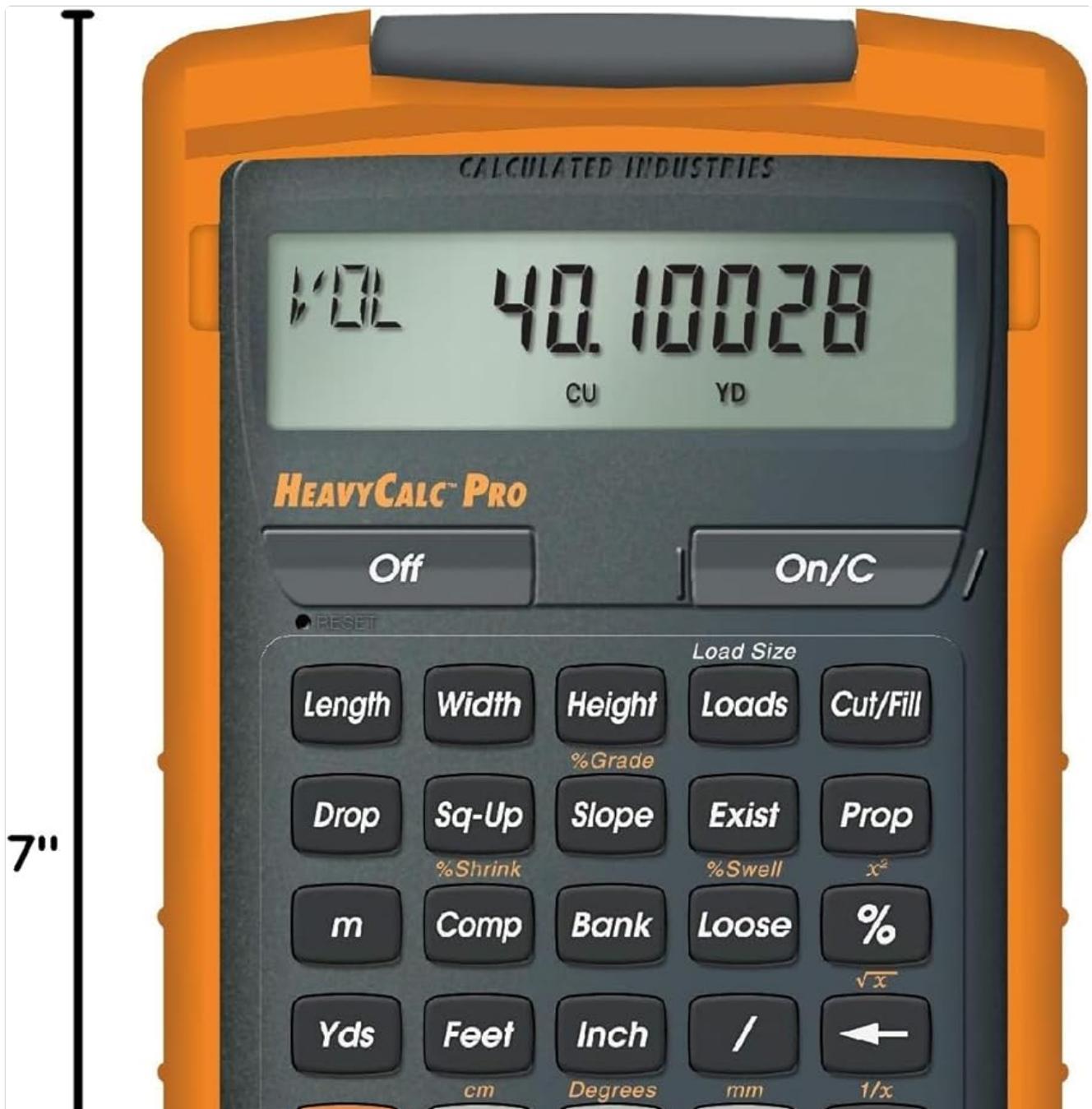




Figure 7.1: Dimensions of the HeavyCalc Pro calculator, showing a height of 7 inches and a width of 5 inches.

8. WARRANTY AND SUPPORT

8.1. Warranty Information

The Calculated Industries HeavyCalc Pro Model 4325 comes with a full 1-year limited warranty. This warranty covers defects in materials and workmanship under normal use. For specific terms and conditions, please refer to the warranty documentation included with your product.

8.2. Customer Support

For additional assistance, technical support, or warranty claims, please visit the Calculated Industries website or refer to the contact information provided in your product packaging. An electronic version of the user guide is available for download: [User Guide \(PDF\)](#).

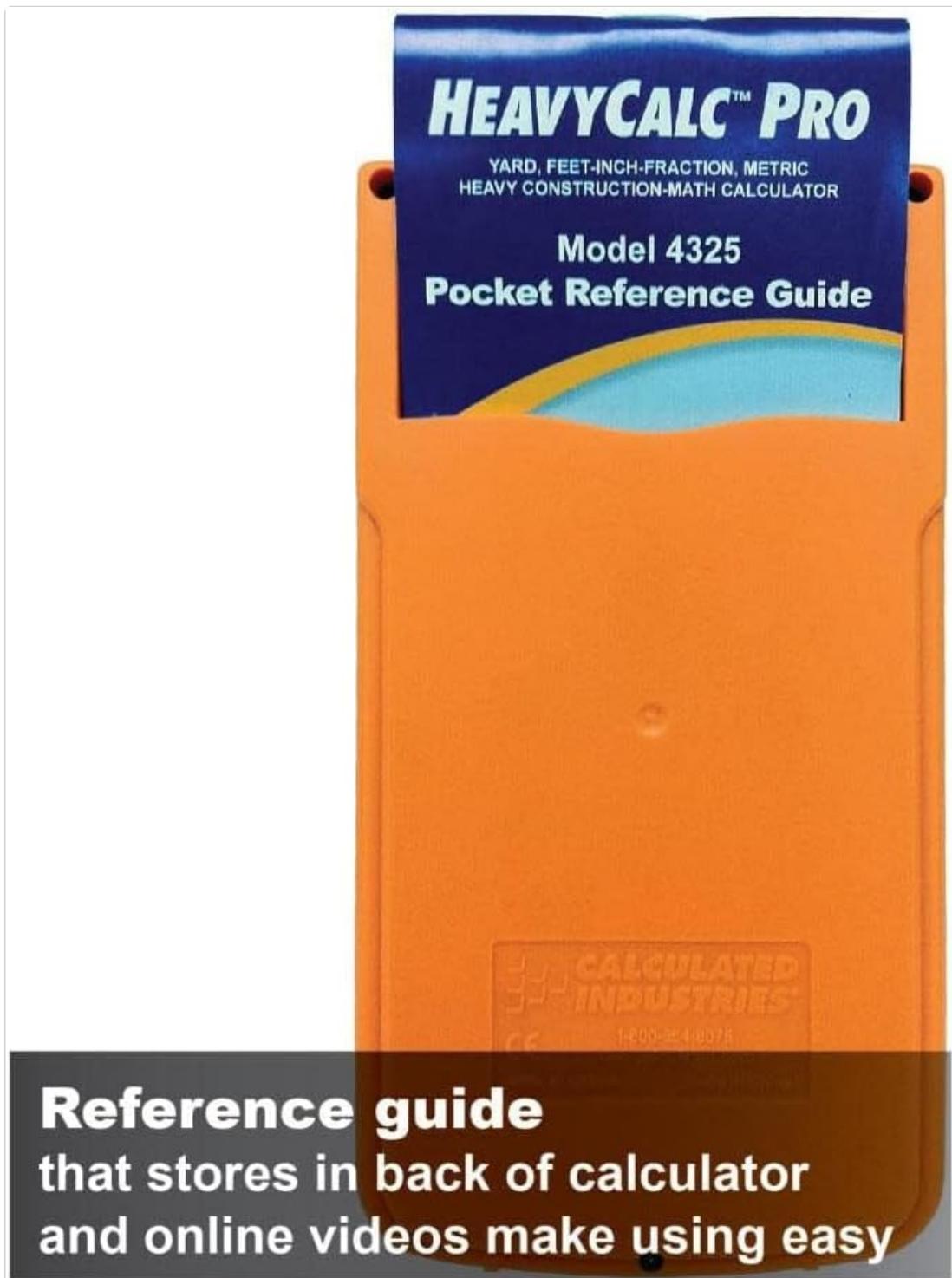


Figure 8.2.1: The back of the HeavyCalc Pro calculator, illustrating the slot where the Pocket Reference Guide is stored for easy access to instructions and functions.

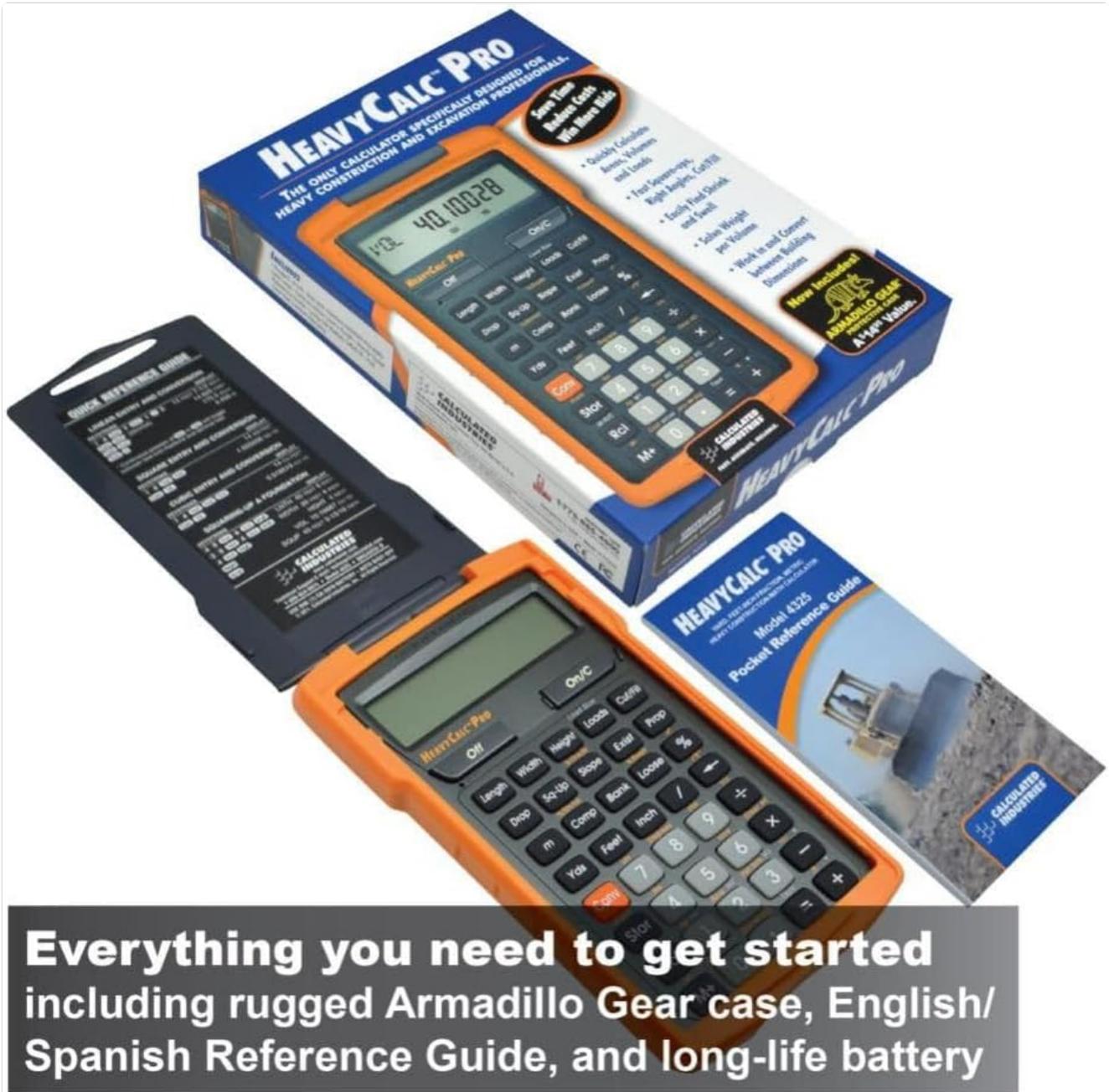


Figure 8.2.2: A complete view of the HeavyCalc Pro package contents, including the calculator, rugged Armadillo Gear case, English/Spanish Reference Guide, and long-life battery, providing everything needed to get started.