

# Record Manager

## **User Manual**

Version 1.0  
Complete Guide to Managing Material Records

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# 1. Overview

The Record Manager is a data management tool for creating, editing, and managing material records. It provides a simple interface for tracking materials with properties such as code, name, dimensions (width, height, thickness), and status flags (marked, selected). The application features real-time filtering, bulk operations, and persistent storage.

## 2. Interface Layout

### Main Window Components

The Record Manager window is divided into three main sections:

#### 1. Top Panel - Input Fields

- Code (text field)
- Name (text field)
- Width (numeric field)
- Height (numeric field)
- Thickness (numeric field)
- Selected checkbox
- Action buttons (New, Add, Delete, Clear All, Delete Marked, Clear Marked, Clear Selected)
- Filter field with Clear Filter button

#### 2. Center Panel - Data Grid

- Displays all records in a table format
- 7 columns: Code, Name, Width, Height, Thickness, Marked, Selected
- Visual checkboxes for Marked and Selected columns
- Row selection for editing

#### 3. Bottom Panel - File Operations

- Save to File button for persisting data

## 3. Record Fields

Each record contains the following fields:

**Code** (Required)

- Unique identifier for the material
- Text field, cannot be empty
- Example: "MAT001", "PLYWOOD\_12MM"

**Name** (Required)

- Descriptive name of the material
- Text field, cannot be empty
- Example: "Oak Plywood", "MDF Board"

**Width** (Optional)

- Width dimension in millimeters
- Numeric field (accepts decimal values)
- Default: 0

**Height** (Optional)

- Height dimension in millimeters
- Numeric field (accepts decimal values)
- Default: 0

**Thickness** (Optional)

- Thickness dimension in millimeters
- Numeric field (accepts decimal values)
- Default: 0

**Marked** (System flag)

- Boolean flag for bulk operations
- Can be toggled in the data grid
- Displayed as checkbox in grid

**Selected** (User flag)

- Boolean flag indicating material selection
- Checkbox in input panel
- Defaults to checked (true) for new records
- Displayed as checkbox in grid

## 4. Adding Records

### Step-by-Step Process:

#### 1. Clear Input Fields (Optional)

- Click the **New** button to clear all input fields
- This prepares the form for entering a new record

#### 2. Enter Required Fields

- Type the material **Code** in the Code field
- Type the material **Name** in the Name field
- Both fields must have values before adding

#### 3. Enter Optional Dimensions

- Enter **Width** (in millimeters) if applicable
- Enter **Height** (in millimeters) if applicable
- Enter **Thickness** (in millimeters) if applicable
- Leave blank or enter 0 if not applicable

#### 4. Set Selection Status

- Check or uncheck the **Selected** checkbox
- Defaults to checked for new records

#### 5. Add the Record

- Click the **Add** button
- The record is validated:
  - If Code is empty → error message appears
  - If Name is empty → error message appears
- If validation passes:
  - Record is added to the list
  - Input fields are cleared
  - Grid is refreshed to show the new record
  - Success message appears: "Record added successfully"

#### Numeric Field Input:

- Width, Height, and Thickness fields accept only numbers
- Decimal separator: period (.) or comma (,)
- Only one decimal separator allowed per number
- Invalid characters are automatically blocked

## 5. Editing Records

### Real-Time Editing Feature:

Records can be edited in real-time by selecting a row in the grid and modifying the input fields.

### How to Edit:

#### 1. Select a Record

- Click on any row in the data grid
- The selected record's data loads into the input fields
- Row is highlighted with selection color

#### 2. Modify Fields

- Change any field value in the input panel
- As you type, changes are **immediately saved** to the record
- No need to click a "Save" or "Update" button
- Grid cell updates in real-time as you type

#### 3. Editable Fields During Selection:

- Code
- Name
- Width
- Height
- Thickness
- Selected checkbox

### Auto-Update Behavior:

- Each keystroke in text fields triggers an update
- Checkbox click immediately updates the record
- Grid cells refresh to show current values
- No confirmation required

### Important Notes:

- Real-time editing only works when a grid row is selected
- Clicking **New** button clears selection and input fields
- The Marked flag can only be toggled in the grid (see Section 11)

## 6. Deleting Records

### Single Record Deletion:

#### 1. Select the Record

- Click on the row you want to delete in the data grid
- The record data loads into the input fields

#### 2. Click Delete Button

- Click the **Delete** button in the top panel
- If no record is selected, error message appears:  
"Please select a record to delete"

#### 3. Confirm Deletion

- Confirmation dialog appears: "Delete selected record?"
- Click **Yes** to delete, **No** to cancel

#### 4. Result

- If confirmed:
  - Record is removed from the list
  - Input fields are cleared
  - Grid refreshes
  - Success message: "Record deleted successfully"

### Clear All Records:

#### 1. Click Clear All Button

- Located in the top panel
- Deletes ALL records from the database

#### 2. Confirm Action

- Confirmation dialog: "Clear all records?"
- Click **Yes** to proceed, **No** to cancel

#### 3. Result

- All records are deleted
- Input fields are cleared
- Grid shows only header row
- Success message: "All records cleared"

**Warning:** Clear All is permanent and cannot be undone unless you have a saved backup file.

# 7. Filtering Records

## Real-Time Filter Feature:

The filter field allows you to quickly find records by Code or Name.

## How to Use:

### 1. Type in Filter Field

- Located in the top panel, above the data grid
- Start typing any text
- Filter activates automatically as you type (no Enter key needed)

### 2. Filter Behavior

- Searches in both Code and Name fields
- Case-insensitive search
- Partial match: shows records containing the filter text
- Grid updates in real-time

### 3. Clear Filter

- Click the **Clear Filter** button
- Filter field is cleared
- All records are shown again

## Examples:

Filter text: "**oak**"

Shows: All records where Code or Name contains "oak"

- "OAK001" - "Oak Plywood 12mm"
- "WOOD\_OAK" - "Solid Oak Board"
- "MAT\_REDOAK" - "Red Oak Veneer"

Filter text: "**12**"

Shows: All records where Code or Name contains "12"

- "PLY12" - "Plywood 12mm"
- "MDF001" - "MDF Board 12mm thick"

## Notes:

- Filter does NOT search in numeric fields (Width, Height, Thickness)
- Filter does NOT affect the actual data, only the display
- Filtered records are still in the database
- Clearing filter shows all records again

## 8. Marking and Selection

### Understanding Marked vs Selected:

The application uses two separate boolean flags:

#### 1. Marked Flag

- System flag for bulk operations
- Toggled by clicking checkboxes in the grid's "Marked" column
- Used for: Delete Marked, Clear Marked operations
- Not editable in input panel

#### 2. Selected Flag

- User-defined flag for material selection
- Editable via checkbox in input panel
- Also visible in grid's "Selected" column
- Used for: Clear Selected operation
- Defaults to true (checked) for new records

### How to Mark Records:

#### Option 1: Click in Grid (Not Implemented Yet)

- Currently, clicking checkbox cells doesn't toggle the Marked flag
- This is a visual display only

#### Option 2: Manual Marking (Future Feature)

- Would require implementing click handler for checkbox cells

### How to Change Selected Status:

#### 1. Via Input Panel

- Select a record in the grid
- Check or uncheck the **Selected** checkbox
- Change is saved immediately (real-time editing)

#### 2. When Adding New Record

- Set Selected checkbox before clicking Add
- Defaults to checked (true)

# 9. Bulk Operations

## Three Bulk Operations Available:

### 1. Delete Marked

**Purpose:** Delete all records where Marked = true

**Steps:**

- Ensure records are marked (Marked column shows checked boxes)
- Click **Delete Marked** button
- Confirmation dialog: "Delete all marked records?"
- Click Yes to delete, No to cancel

**Result:**

- All marked records are deleted
- Unmarked records remain
- Grid refreshes
- Success message: "Marked records deleted successfully"

### 2. Clear Marked

**Purpose:** Set Marked = false for all records

**Steps:**

- Click **Clear Marked** button
- No confirmation required

**Result:**

- All records' Marked flag is set to false
- Records remain in database
- Grid refreshes (checkboxes in Marked column are unchecked)
- Success message: "All marks cleared"

### 3. Clear Selected

**Purpose:** Set Selected = false for all records

**Steps:**

- Click **Clear Selected** button
- No confirmation required

**Result:**

- All records' Selected flag is set to false
- Records remain in database
- Grid refreshes (checkboxes in Selected column are unchecked)
- Success message: "All selections cleared"

**Use Cases:**

**Delete Marked:**

- Remove multiple obsolete materials at once
- Clean up temporary or test records

**Clear Marked:**

- Reset all marks after a bulk delete operation
- Prepare for a new marking session

**Clear Selected:**

- Deselect all materials for a new selection
- Reset selection flags for batch processing

# 10. Saving Data

## **Persistent Storage:**

All changes to records (add, edit, delete) are stored in memory during the session. To save changes permanently to disk, use the Save to File feature.

## **How to Save:**

### **1. Click Save to File Button**

- Located in the bottom panel
- No confirmation dialog

### **2. Result**

- All current records are saved to file
- Success message: "Data saved successfully"

## **File Location and Format:**

- Determined by the RestRecordManager implementation
- Typically saves to a JSON or binary file
- Includes all record fields and flags

## **Auto-Save:**

- Application does NOT auto-save
- You must manually click Save to File
- Unsaved changes are lost when the application closes

## **Best Practices:**

- Save regularly during long editing sessions
- Save before performing bulk delete operations
- Save before closing the application
- Consider saving after importing large datasets

# 11. Data Grid Features

## Grid Layout:

### 7 Columns:

1. **Code** (100 pixels wide)
2. **Name** (150 pixels wide)
3. **Width** (80 pixels wide)
4. **Height** (80 pixels wide)
5. **Thickness** (80 pixels wide)
6. **Marked** (60 pixels wide) - Checkbox
7. **Selected** (60 pixels wide) - Checkbox

## Visual Features:

### Row Selection:

- Click any row to select it
- Selected row is highlighted
- Entire row is selected (goRowSelect mode)
- Record data loads into input fields

### Checkbox Display:

- Marked and Selected columns show visual checkboxes
- Checked box = true (value '1')
- Unchecked box = false (value '0')
- Centered in cell
- Standard Windows checkbox appearance

### Fixed Header Row:

- First row is always the header
- Contains column names
- Does not scroll with data

### Dynamic Row Count:

- Grid expands automatically as records are added
- Minimum 2 rows (header + 1 data row)
- Shrinks when records are deleted or filtered

## 12. Workflow Examples

### *Example 1: Adding a New Material*

1. Click **New** to clear input fields
2. Enter Code: "PLY18"
3. Enter Name: "Birch Plywood 18mm"
4. Enter Width: 2440
5. Enter Height: 1220
6. Enter Thickness: 18
7. Ensure Selected checkbox is checked
8. Click **Add**
9. Record appears in grid
10. Input fields are automatically cleared

### *Example 2: Editing an Existing Record*

1. Click on the record in the grid (e.g., "PLY18")
2. Record data loads into input fields
3. Change Name to "Birch Plywood 18mm Grade A"
4. Change Width to 2500
5. Changes save automatically as you type
6. Grid updates in real-time

### *Example 3: Finding and Deleting Materials*

1. Type "plywood" in the filter field
2. Grid shows only plywood materials
3. Click on the record you want to delete
4. Click **Delete**
5. Confirm deletion (Yes)
6. Record is removed
7. Click **Clear Filter** to see all remaining records

### *Example 4: Bulk Deletion of Materials*

1. Mark several records (via Marked column checkboxes)
2. Click **Delete Marked**
3. Confirm: "Delete all marked records?" → Yes
4. All marked records are deleted
5. Click **Clear Marked** to reset marks on remaining records
6. Click **Save to File** to persist changes

# 13. Tips and Best Practices

## **Data Entry Tips:**

- Use consistent naming conventions for Codes (e.g., "MAT001", "MAT002")
- Include dimensions in material names for quick reference
- Set Selected = true for currently available materials
- Save regularly to avoid losing work

## **Organization Tips:**

- Use filter to work with subsets of materials
- Group similar materials with consistent Code prefixes
- Keep Name field descriptive but concise
- Use bulk operations to maintain clean database

## **Editing Tips:**

- Real-time editing is convenient but requires caution
- Be careful not to accidentally modify wrong records
- Click New before adding records to avoid editing selected record
- Verify changes in grid after editing

## **Performance Tips:**

- Filter large datasets to reduce grid size
- Delete obsolete records regularly
- Save after major changes
- Use Clear Marked/Selected to reset flags in bulk

## 14. Troubleshooting

**Problem:** Cannot add record

**Cause:** Required field is empty

**Solution:** Ensure both Code and Name fields have values

**Problem:** Decimal separator not working

**Cause:** Multiple decimal points in number

**Solution:** Only one period (.) or comma (,) allowed per number

**Problem:** Cannot type letters in numeric fields

**Cause:** Numeric validation is active

**Solution:** This is intentional - only numbers and decimal separator allowed

**Problem:** Changes not saving

**Cause:** Haven't clicked Save to File

**Solution:** Click **Save to File** button to persist changes

**Problem:** Filter shows no results

**Cause:** No records match filter text

**Solution:** Clear filter or adjust search text

**Problem:** Cannot select record for deletion

**Cause:** No row selected in grid

**Solution:** Click on a row in the grid first

**Problem:** Real-time editing not working

**Cause:** No record selected in grid

**Solution:** Click on a grid row to select a record first

**Problem:** Marked checkbox not toggling

**Cause:** Grid checkbox click not implemented

**Solution:** Marking currently only works programmatically (future feature)

# 15. Technical Notes

## Data Structure:

Each record (TRestRecord) contains:

- Code: string
- Name: string
- Width: floating-point number
- Height: floating-point number
- Thickness: floating-point number
- Marked: boolean
- Selected: boolean

## Data Storage:

- Records managed by global TRestRecordManager instance
- In-memory storage during session
- File-based persistence via SaveToFile method
- Changes are not auto-saved

## Validation Rules:

- Code cannot be empty
- Name cannot be empty
- Numeric fields accept positive/negative numbers
- Decimal separator: period (.) or comma (,)
- Whitespace is trimmed from Code and Name

## Grid Implementation:

- TStringGrid component with 7 columns
- Fixed header row (row 0)
- Data rows start at row 1
- Checkboxes drawn using DrawFrameControl API
- Boolean values stored as '1' (true) or '0' (false) in grid cells

## Real-Time Editing:

- OnChange events on edit controls
- OnClick event on checkbox
- UpdateCurrentRecord called on every change
- Grid cell updated immediately
- No undo functionality

## Filter Implementation:

- OnKeyUp event on filter edit control
- Case-insensitive partial string match
- Searches Code and Name fields only
- Grid refreshes on every keystroke