SQL QUERY DOCUMENTATION
Construction Materials Market Analysis

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Project: Demand Intelligence & Channel Optimization

Query 1 – Data Preview

```
SELECT *
FROM construction_orders
LIMIT 10;
```

Explanation:
Retrieves a small sample of records to understand dataset structure and validate imported data.

Query 2 – Table Structure Inspection

```
DESCRIBE construction_orders;
```

Explanation:
Verifies column names, data types, and schema integrity.

Query 3 – Data Completeness Check

```
SELECT
COUNT(*) AS total_rows,
COUNT(order_date) AS order_date_count,
COUNT(contractor_name) AS contractor_count,
COUNT(quantity_ordered) AS quantity_count
FROM construction_orders;
```

Explanation:
Ensures key fields contain no missing values.

Query 4 – District-wise Demand Distribution (Market Expansion Base)

```
SELECT
district,
SUM(quantity_ordered) AS total_quantity
FROM construction_orders
GROUP BY district
ORDER BY total_quantity DESC;
```

Explanation:
Identifies high-demand districts to evaluate geographic concentration and expansion potential.

Query 5 – District Contribution Percentage

```
SELECT
district,
SUM(quantity_ordered) AS district_volume,
ROUND(
SUM(quantity_ordered) * 100.0 /
(SELECT SUM(quantity_ordered) FROM construction_orders),
2) AS contribution_percent
FROM construction_orders
GROUP BY district
ORDER BY contribution_percent DESC;
```

Explanation:
Measures district contribution to total volume to detect overdependence or underpenetration.

Query 6 – Contractor Repeat Rate (Retention Core Metric)

```
SELECT
COUNT(DISTINCT contractor_name) AS total_contractors,
SUM(repeat_contractor_flag) AS repeat_contractors,
ROUND(
SUM(repeat_contractor_flag) * 100.0 /
COUNT(DISTINCT contractor_name),
2) AS repeat_rate_percent
FROM (
SELECT
contractor_name,
CASE WHEN COUNT(*) > 1 THEN 1 ELSE 0 END AS
repeat_contractor_flag
FROM construction_orders
GROUP BY contractor_name
) t;
```

Explanation:
Calculates contractor retention by identifying repeat purchasers.

Query 7 – Contractor Type Volume Analysis

```
SELECT
contractor_type,
```

```
COUNT(*) AS total_orders,
SUM(quantity_ordered) AS total_volume
FROM construction_orders
GROUP BY contractor_type
ORDER BY total_volume DESC;
```

Explanation:
Identifies which contractor segment drives maximum volume.

Query 8 – Channel Contribution Analysis

```
SELECT
channel_type,
SUM(quantity_ordered) AS total_volume,
ROUND(
SUM(quantity_ordered) * 100.0 /
(SELECT SUM(quantity_ordered) FROM construction_orders),
2) AS contribution_percent
FROM construction_orders
GROUP BY channel_type
ORDER BY total_volume DESC;
```

Explanation:
Evaluates distribution channel performance for strategic optimization.

Query 9 – Order Funnel Analysis

```
SELECT
order_status,
COUNT(*) AS total_orders,
ROUND(
COUNT(*) * 100.0 /
(SELECT COUNT(*) FROM construction_orders),
2) AS status_percent
FROM construction_orders
GROUP BY order_status;
```

Explanation:
Analyzes order completion, pending, and cancellation patterns to detect funnel leakage.

Query 10 – Sales Manager Productivity

```
SELECT
sales_manager_code,
COUNT(*) AS total_orders,
SUM(quantity_ordered) AS total_volume,
```

```
ROUND(AVG(quantity_ordered),2) AS avg_order_size
FROM construction_orders
GROUP BY sales_manager_code
ORDER BY total_volume DESC;
```

Explanation:
Benchmarks sales performance across managers.

Query 11 – Product Category Performance

```
SELECT
product_category,
SUM(quantity_ordered) AS total_volume,
COUNT(*) AS total_orders
FROM construction_orders
GROUP BY product_category
ORDER BY total_volume DESC;
```

Explanation:
Identifies top-performing product categories.

Query 12 – Monthly Demand Trend

```
SELECT
year_month,
SUM(quantity_ordered) AS monthly_volume
FROM construction_orders
GROUP BY year_month
ORDER BY year_month;
```

Explanation:
Evaluates demand trends over time to detect seasonality.