

Warehouse Management System (RULE SETS ASSUMED FOR DEKKER’S PICKING)

| Rule ID | Logic Description | Trigger Condition | Applied Heuristic | Zone |
|---------|--|--------------------------------------|-------------------|---------|
| WMS-R01 | Assign S-shape route if order has ≥ 3 items from Frozen (FZ) | Order Line Items ≥ 3 from FZ | S-shape | Frozen |
| WMS-R02 | Assign Mid-point route if all chilled items are in same zone and < 4 lines | Line Items ≤ 3 from CH only | Mid-point | Chilled |
| WMS-R03 | Assign Combined route if order has items in both FZ and CH | Mixed zone orders (FZ + CH) | Combined | FZ + CH |
| WMS-R04 | Allocate pick path to start with FZ if dry ice needed | Product Type = Requires Dry Ice | S-shape Start | Frozen |
| WMS-R05 | Use slotting by velocity in CH; fast movers to front end of aisle | SKU Pick Frequency $> X/\text{week}$ | Mid-point | Chilled |

| | | | | |
|---------|---|---------------------------------|--------------------|--------------|
| | aisles | | | |
| WMS-R06 | Freeze location mapping for heavy frozen SKUs near exit | SKU Weight > 20kg | S-shape | Frozen |
| WMS-R07 | Assign cluster picking if multiple orders are for same reefer route | Route ID is same across orders | Combined Cluster | All Zones |
| WMS-R08 | Trigger dry ice packing instruction post pick-complete at AR | Order contains frozen + chilled | Post-pick Rule | Ante Room |
| WMS-R09 | Validate reefer van bay allocation after pack completion | Status = "Packed" | Load Assignment | Loading Dock |
| WMS-R10 | Balance picker load to avoid cold fatigue: max 30 mins per FZ run | Time in FZ > 30 min | Switch Picker Zone | All Zones |