TECHNICAL DATA FOR BS SKYCAST ULTRA

Ultra-High Early Strength Admixture for Premium Precast Production

Description of BS Skycast Ultra

BS Skycast Ultra is a **premium, ultra-efficient early strength admixture** engineered for **high-value precast concrete elements where mould turnover speed, early handling safety, and dimensional reliability are critical**.

Skycast Ultra is designed for precast manufacturers who operate **tight production cycles, expensive mould systems, and high rejection sensitivity**, where even small delays in demoulding or early-age damage translate directly into financial loss.

Unlike conventional accelerators or general-purpose superplasticizers, BS Skycast Ultra is optimized to **build usable green strength extremely fast at very low dosages**, allowing **earlier demoulding without surface tearing, corner failure, or strength compromise**.

In short:
Skycast Ultra is not for economy production—it is for **maximum productivity per mould per day**.

Where This Product Acts in the Precast Cycle

BS Skycast Ultra is most active in the **earliest and most sensitive phases** of precast production:

- **Batching & Mixing:** Rapid cement activation and efficient dispersion
- **Casting & Vibration:** Controlled flow with tight matrix formation
- **Green Concrete Stage:** Very fast strength build-up and shape stability
- **Demould Stage:** Extremely early, safe demoulding with minimal risk
- **Handling & Early Curing:** Reduced micro-cracking and edge damage

Core Problems Addressed

BS Skycast Ultra is designed to solve the following **high-impact precast problems**:

1. **Slow mould turnover in premium or high-strength precast elements**
2. **Risk of edge, corner, or surface damage during early demoulding**
3. **Inconsistent early strength limiting stacking or handling speed**

Technical Performance (Expected)

Parameter	Typical Effect*
Mould opening time	Reduced by 2–4 hours
Early strength (8–24 hrs)	30–60% higher vs control
Edge / corner damage	Minimal when dosed correctly
Surface definition	Sharp edges, dense finish
Mould reuse frequency	Significantly increased

*Actual performance depends on cement type, mix design, ambient temperature, curing method, and mould geometry. Controlled plant trials are mandatory.

Dosage Guidance

By Weight of Cement (% bwoc)

Dosage Band	% bwoc	Use Guidance
Safe	0.15 – 0.25%	Initial trials
Standard (Recommended)	**0.25 – 0.40%**	Most premium precast
Aggressive (Trial only)	0.40 – 0.60%	Very fast cycles / cold weather

By Cement Bag (50 kg)

Dosage Band	gm / bag
Safe	75 – 125 g
Standard (Recommended)	**125 – 200 g**
Aggressive (Trial only)	200 – 300 g

Important: Skycast Ultra is a **concentrated system**. Overdosing does not improve results and may increase risk.

Application Instructions (Precast-Specific)

1. Load aggregates and cement into the mixer.
2. Add **80–85% of total mixing water** and mix for 2–3 minutes.

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3. Add the measured quantity of BS Skycast Ultra with the remaining water.
4. Continue mixing for a **minimum 2–3 minutes** to ensure full activation.
5. Cast and compact immediately.

Do Not:

- Add directly to dry cement or aggregates
- Combine with strong chloride accelerators
- Use without plant-level trials

Failure Modes & Corrective Action

Symptom	Likely Cause	Corrective Action
Flash set / very rapid stiffening	**Overdosage**	**Reduce dosage by 20–30%**
Surface tearing at demould	**Demould too early**	**Delay demould by 30–60 min**
Sticky finish	**Excess water**	**Reduce water by 3–5%**

Compatibility Notes (Precast Reality)

- **Cement:** OPC 53 preferred; compatible with OPC 43 and selected PPC (trial required)
- **Pigments:** Compatible; conduct shade and timing trials
- **Fibers:** Compatible with glass and steel fibers
- **Other Admixtures:** Compatible with shrinkage reducers and finish modifiers (avoid double accelerators)
- **Steam / Accelerated Curing:** Highly compatible; dosage adjustment recommended

Typical Technical Properties

Property	Value
Appearance	Clear to pale yellow liquid
Density	1.05 – 1.15 kg/L
pH	5 – 8
Chloride Content	< 0.1%
Alkali Content	Low

Trial Protocol

Minimum 10 consecutive production batches

- Record:
  - Exact demould time
  - Early handling damage
  - Surface sharpness
  - Strength at demould (if tested)
- Accept only if **mould cycle time improves without defects**

Storage and Shelf Life

- Store indoors, protected from sunlight and frost
- Recommended storage temperature: above +5 °C
- Shelf life: **12 months** in sealed containers

Disclaimer

The information in this sheet is provided for general guidance and is based on current knowledge and experience. Due to the variety of possible application methods and site conditions, no responsibility is assumed for results obtained under specific circumstances.

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