DEW POINT CONTROL PROCEDURE: ESSENTIAL CLIMATE CONTROL FOR RELIABLE BONDED FAÇADE SYSTEMS

In bonded façade construction, perfect adhesion starts long before the adhesive is applied. Environmental conditions play a critical role in achieving a safe, durable and long-lasting adhesive connection.
One of the most important factors during installation is controlling the dew point.
At TWEHA®, we understand that even the best adhesive system can only perform optimally when application conditions are fully under control. That is why proper dew point monitoring is an essential part of professional bonded façade installation.

Why Dew Point Control Matters

When façade panels are bonded, both bonding surfaces — the backside of the façade panel and the front surface of the vertical battens or substructure — must remain completely dry during installation.
If condensation forms on the substrate surface, adhesion can be seriously compromised. Even an invisible thin moisture film between the adhesive and the substrate can prevent proper bonding and may eventually lead to:

- Adhesion failure
- Reduced bonding strength
- Long-term durability problems
- Costly repairs or replacements

For this reason, controlling environmental conditions during application is essential.

What Is Dew Point?

The dew point is the temperature at which air becomes fully saturated with moisture.
When a surface cools below the dew point temperature, water condensation begins to form on that surface.
In bonded façade systems, this means:

- Moisture can form on the cladding panel
- Moisture can develop on the substructure
- Adhesion performance can be negatively affected

That is why professional installers continuously monitor:

- Ambient temperature
- Relative humidity
- Surface temperature
- Dew point conditions

during the entire bonding process.

The Critical Rule for Safe Bonding

To avoid condensation during adhesive application, the substrate temperature must always remain at least: **3°C (34°F) above the dew point temperature**

This safety margin helps prevent moisture formation on the bonding surfaces and ensures optimal adhesive performance.
In addition:

- Relative humidity should never exceed 90%
- Bonding should not take place in critical dew point conditions
- Climate conditions must be monitored continuously during application

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Understanding Safe and Unsafe Conditions

Temp. (°C)	50	55	60	65	70	75	80	85	90	95	100
50	37	38	40	41	43	44	45	46	47	49	50
45	32	34	35	37	38	39	41	42	43	44	45
40	28	29	31	32	34	35	36	37	38	39	40
35	23	25	26	27	29	30	31	32	33	34	35
30	19	20	21	23	24	25	26	27	28	29	30
26	15	16	17	19	20	21	22	23	24	25	26
25	14	15	16	18	19	20	21	22	23	24	25
24	13	14	15	17	18	19	20	21	22	23	24
22	11	12	13	15	16	17	18	19	20	21	22
20	9	11	12	13	14	15	16	17	18	19	20
18	7	9	10	11	12	13	14	15	16	17	18
16	6	7	8	9	10	11	12	13	14	15	16
15	5	6	7	8	9	10	11	12	13	14	15
14	4	5	6	7	8	9	10	11	12	13	14
12	2	3	4	6	7	8	9	10	10	11	12
10	0	1	3	4	5	6	7	7	8	9	10
8	-2	0	1	2	3	4	5	6	6	7	8
6	-3	-2	-1	0	1	2	3	4	4	5	6
4	-5	-3	-2	-2	-1	0	1	1	2	3	4
2	-7	-5	-4	-3	-2	-1	0	0	1	1	2
0	-8	-7	-6	-5	-4	-3	-2	-1	-1	0	0
-5	-13	-12	-10	-10	-9	-8	-7	-7	-6	-6	-5
-10	-18	-17	-16	-15	-14	-13	-12	-12	-11	-11	-10

Depending on the combination of:

- Ambient temperature
- Relative humidity

There is an increasing risk of condensation forming on the substrate surfaces.
Professional dew point tables and monitoring systems help installers determine whether bonding conditions are safe.

Typical Condition Categories:

Safe Application Zone

No dew point risk. Conditions are suitable for adhesive application.

Caution Zone

Possible condensation risk. Extra attention and monitoring are required during installation.

High Risk Zone

High risk of dew formation on materials. Bonding should be postponed until conditions improve.

Or use the TWEHA® Dew Point Calculator on the TWEHA® app!

This practical tool allows users to quickly calculate the exact dew point under different environmental conditions and determine whether bonding conditions are safe.

The calculator helps identify:

- Safe application conditions
- Potential condensation risks
- Critical dew point situations where bonding is forbidden

By using the calculator during installation, façade professionals can significantly reduce bonding risks and improve overall quality control.

Professional Climate Monitoring Improves Quality Assurance

Modern bonded façade systems require complete process control.

That is why TWEHA® strongly recommends continuous climate monitoring during in-situ bonding applications.

Professional humidity and temperature monitoring systems allow installers to:

- Measure ambient temperature
- Monitor relative humidity 24/7
- Detect critical dew point conditions
- Register surface temperatures
- Store climate data digitally
- Support warranty documentation

This creates full transparency throughout the bonding process and contributes to reliable long-term façade performance.

Reliable Bonding Starts with the Right Conditions

Successful bonding depends not only on high-quality adhesive systems, but also on strict environmental control during installation.

By combining:

- Advanced bonding technology
- Proper substrate preparation
- Professional applicator training
- Continuous dew point monitoring
- Use of the Dew Point Calculator

TWEHA® helps façade professionals achieve maximum safety, durability and bonding reliability.
Because in bonded façade construction, climate control is not optional — it is essential.

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