



**INDUSTRIES**  
— ISO 9001: 2015 COMPANY —

# NEXT-GEN CONCRETE PERFORMANCE

The Power of ADT (Admixture) SNF 2040 Superplasticizer



# TABLE OF CONTENTS

<b>PAGE</b>	<b>TOPIC</b>
<b>3</b>	<b>Executive Summary &amp; Product Overview</b>
<b>4</b>	<b>The Importance of Concrete Admixtures – Why SNF-based Superplasticizers Matter</b>
<b>5</b>	<b>Traditional Concrete Admixture Challenges &amp; Limitations</b>
<b>6</b>	<b>ADT Admix SNF 2040 – Technical Innovation Explained</b>
<b>7</b>	<b>Technical Specifications &amp; Performance Data</b>
<b>8</b>	<b>Application Guidelines &amp; Best Practices</b>
<b>9</b>	<b>Quality Control &amp; Verification Protocols</b>
<b>10</b>	<b>Troubleshooting Guide – Expert Solutions</b>
<b>12</b>	<b>Safety Protocols &amp; Environmental Compliance</b>
<b>13</b>	<b>Conclusion: Delivering High-Performance Concrete with ADT SNF 2040</b>
<b>14</b>	<b>About ADT Industries &amp; Contact Information</b>

# EXECUTIVE SUMMARY & PRODUCT OVERVIEW

ADT Admix SNF 2040 is an exceptionally effective and cost-efficient superplasticizer, meticulously formulated from sulphonated naphthalene formaldehyde condensate. This innovative chemical additive is expertly designed to meet the stringent demands of contemporary concrete applications. Its primary advantages encompass improved workability, enhanced flow properties, and reduced water-to-cement ratios, making it an ideal choice for a wide range of construction projects. By incorporating ADT Admix, users can achieve superior strength and durability while ensuring optimal performance in various environmental conditions.



- 1. Improved Workability:** By enhancing the flow characteristics of fresh concrete, ADT Admix facilitates easier handling and application, making it ideal for intricate designs and challenging placements.
- 2. Reduced Water Demand:** The product allows for a significant reduction in water content while maintaining the concrete's strength. This is crucial for achieving the desired water-to-cement ratio, resulting in improved durability and longevity of the structure.
- 3. Increased Compressive Strength:** ADT Admix promotes accelerated strength development, providing enhanced early-age and long-term compressive strength. This characteristic is essential for projects requiring rapid turnaround times or high load-bearing capabilities.
- 4. Easier Placement and Compaction:** Specially critical for high-performance concrete and architecturally demanding applications, this superplasticizer ensures streamlined placement and effective compaction, reducing the risk of air pockets and enhancing overall concrete integrity.

Overall, ADT Admix SNF 2040 emerges as a highly dependable solution for construction professionals aiming to enhance concrete performance while maintaining budgetary limitations. This innovative admixture is formulated to improve the workability, strength, and durability of concrete, making it an ideal choice for a variety of construction applications. By integrating ADT Admix into their projects, professionals can achieve optimal results without compromising on quality or exceeding their cost constraints.

# THE IMPORTANCE OF CONCRETE ADMIXTURES- WHY SNF-BASED SUPERPLASTICIZERS MATTER

Superplasticizers serve a vital function in fulfilling the increasing performance demands of contemporary concrete applications. These sophisticated chemical admixtures significantly enhance the properties of concrete in several critical aspects:

## **1. High Fluidity and Ease of Placement:**

Superplasticizers increase the workability of concrete, allowing it to flow smoothly and fill intricate formwork, even in heavily reinforced areas. This property is particularly beneficial in avoiding voids and ensuring uniform distribution of materials, which is essential for structural integrity.

**2. Reduction of Water Content:** By allowing a reduction in the amount of water required for mixing, superplasticizers enhance the overall strength and durability of the concrete. Lower water-to-cement ratios contribute to a denser microstructure, resulting in improved compressive strength and reduced permeability, which helps resist environmental attacks.

**3. Enhanced Cohesion:** The use of superplasticizers improves the cohesion of the concrete mix. This advancement minimizes the risks of segregation and bleeding, ensuring that the aggregates and cement paste remain uniformly distributed. This attribute is critical for maintaining the desired mechanical properties and aesthetic appearance of the finished concrete.

Conversely, inadequate or improper use of admixtures can result in several challenges during the placement and performance of concrete. Difficult placements may occur, leading to an increased water demand, which compromises the concrete's strength and durability. Additionally, improper mix formulations can heighten the risk of honeycombing—a common defect characterized by the presence of voids or gaps within the concrete—ultimately affecting the structure's long-term performance and longevity. In summary, the careful integration of superplasticizers is essential for achieving high-quality, durable concrete structures that meet modern engineering standards.



# TRADITIONAL CONCRETE ADMIXTURE CHALLENGES & LIMITATIONS

Traditional plasticizers and water-reducing agents often encounter several limitations that can significantly impact their effectiveness in concrete formulations. One primary concern is their typically restricted workability time, which can pose challenges in maintaining the desired slump retention during the mixing and pouring processes. This limitation can result in difficulties for construction workers, who may struggle to place and finish the concrete effectively before it begins to set.

Additionally, these traditional additives usually require higher dosages to achieve performance levels comparable to newer alternatives, which can lead to increased material costs. This necessitates careful consideration of the economic implications for large-scale projects, where even minor increases in chemical consumption can escalate overall expenses.

Moreover, there is a notable risk that traditional plasticizers may negatively affect the setting time of the concrete, causing unwanted delays in hardening. Such delays can be particularly troublesome in time-sensitive construction scenarios, where project timelines are critical, and delays can lead to increased labor costs and client dissatisfaction.



Moreover, conventional additives used in concrete mixtures can unintentionally lead to unwanted air entrapment. This phenomenon can jeopardize the overall structural integrity and long-term durability of the concrete. When excessive air pockets form within the concrete matrix, they disrupt the uniformity of the material, resulting in a weakened structure that is more prone to cracking. These air pockets not only diminish the material's compressive strength but also reduce its load-bearing capacity, heightening the risk of premature failure, especially when exposed to harsh environmental conditions, such as freeze-thaw cycles, high humidity, or aggressive chemical agents.

The potential consequences of air entrapment extend beyond mere reductions in strength; they also affect the concrete's resistance to weathering, corrosion, and other forms of deterioration. Hence, it becomes crucial to carefully select additives that align with the specific requirements of the concrete application in question. By doing so, engineers and construction professionals can enhance the performance, reliability, and longevity of their structures, ensuring they can withstand the intended service conditions without succumbing to failure over time.

# ADT ADMIX SNF 2040 – TECHNICAL INNOVATION EXPLAINED

**Composition:** This innovative formulation comprises a high-purity, sulfate-free superplasticizer based on sulfonated naphthalene formaldehyde (SNF) chemistry. It is meticulously designed to achieve optimal dispersion of cement particles, which is crucial for enhancing the overall performance of concrete. The unique composition includes carefully selected additives that promote effective performance while preserving the structural integrity and longevity of the finished concrete.

**Mode of Action:** The product operates through a targeted mechanism that effectively disperses agglomerated cement particles. By modifying the surface tension and electrostatic properties, the dispersant facilitates the separation of particles at a molecular level. This advanced dispersion mechanism enhances the mix fluidity, allowing for easier handling and application of concrete. The improved particle interactions lead to a more homogenous mixture, ensuring that each component works synergistically.

**Result:** The enhanced dispersion of particles significantly reduces the water-cement ratio required for the mixture. This reduction not only contributes to the creation of denser and stronger concrete with higher compressive strength but also promotes improved durability and less susceptibility to cracking or water penetration. Additionally, the improved workability results in a smoother, more aesthetically pleasing finish that meets the demands of both functional and aesthetic requirements in construction.

**Compatibility:** This versatile dispersant is suitable for use with all grades of concrete, including specialized applications such as precast elements, pumped concrete systems, and placements in challenging hot weather conditions. Its compatibility with various cement types and admixtures ensures consistent performance and results across a wide range of construction practices and environmental challenges, making it an ideal choice for diverse project requirements.



# TECHNICAL SPECIFICATIONS & PERFORMANCE DATA

The Technical Specifications & Performance Data for ADT (Admix) SNF 2040 highlight its effectiveness as a high-range, SNF-based superplasticizer designed for advanced concrete applications. This brown liquid admixture features a specific gravity of 1.20–1.24 at 27°C and a pH value between 7 and 9, ensuring stability and compatibility across varying concrete grades. When dosed at 0.6–2.0% by cement weight, SNF 2040 reduces water demand by up to 25%, directly boosting both early and final compressive strength while improving concrete workability. Importantly, the product is chloride-free, making it safe for reinforced (RCC) structures and compliant with international standards like IS:9103-1999 and ASTM C494 (Types F & G). Its versatility means it can be used in ready-mix, pumped, precast, or high-strength concrete, with packaging from 500ml to 200L, ensuring adaptability for any project size. This blend of technical features guarantees consistent, high-performance results for modern construction needs.

Property	Details
Appearance	Brown liquid
Base	Sulphonated naphthalene formaldehyde
Specific Gravity	Approx. 1.20-1.24 (at 27°C)
pH	7-9
Dosage	0.6% to 2.0% by weight of cement
Water Reduction	Up to 25%
Chloride Content	Nil (Chloride-free, hence safe for RCC)
Standards Compliance	IS:9103-1999, ASTM C494 (Type F & G)
Packaging	500ml, 1L, 5L, 10L, 20L, 200L

# APPLICATION GUIDELINES & BEST PRACTICES

The Application Guidelines & Best Practices for ADT (Admix) SNF 2040 emphasize the optimal use of this superplasticizer to achieve maximum concrete performance. Recommended dosage ranges from 0.6% to 2.0% by weight of cement, with 0.8% as a typical starting point to fine-tune through trials. It should be added to the gauging water, never directly to dry cement, ensuring uniform dispersion for consistent results. ADT SNF 2040 is compatible with various cement types, including OPC, PPC, PSC, and fly ash blends. Ideal for high-rise pumping, precast elements, and hot weather concreting, following these practices ensures improved workability, reduced water demand, and enhanced strength without compromising durability. Regular mixing and dosage adjustments based on site conditions are key to success.



**Dosage:** The recommended dosage of the additive is between 0.6% and 2.0% by weight of the cement. It is advisable to conduct trial mixes to determine the optimum dosage for specific project requirements, as variations in material properties and environmental conditions may affect performance.

**Addition:** The additive should be incorporated into the concrete mix by adding it to the gauging water before mixing. It is crucial to avoid adding the additive directly to dry cement, as this may lead to uneven distribution and reduced effectiveness.

**Mixing:** To achieve the best results, ensure thorough and uniform dispersion of the additive throughout the entire mix. This can be accomplished by using a high-shear mixer or by allowing sufficient mixing time to ensure that all components are adequately combined.

**Use Cases:** This additive is particularly well-suited for applications requiring high strength and performance characteristics. It is ideal for use in high-strength concrete, precast concrete elements, ready-mix concrete, and precast applications where enhanced durability, workability, and performance are critical. This versatility makes it a valuable addition to various construction projects, including commercial, industrial, and infrastructure development.

# QUALITY CONTROL & VERIFICATION PROTOCOLS

Quality control plays a pivotal role in the performance of ADT (Admix) SNF 2040 in concrete applications. We begin by evaluating workability through rigorous slump tests, both prior to and after the addition of the admixture, to confirm optimal flow and consistency. To assess the material's strength, we conduct compressive strength tests at critical intervals of 1, 3, 7, and 28 days, ensuring that the concrete meets or exceeds expected benchmarks.

Meticulous documentation of dosage and mixing procedures is essential to uphold industry standards and facilitate traceability. By establishing clear indicators of quality, we can swiftly identify any discrepancies and implement necessary adjustments, thereby safeguarding the integrity of the concrete mix. This diligent approach not only enhances the reliability of the results but also fosters trust and confidence among users. Adhering to these protocols on a regular basis is vital for achieving consistently high-quality outcomes.



- Conduct slump and workability tests using standardized procedures, such as the ASTM C143 method, to accurately assess the concrete's consistency prior to and following the addition of any chemical or mineral admixtures. This will help ensure that the concrete mix meets the specified workability requirements for the intended application.
- Carry out compressive strength cube tests in accordance with ASTM C39 standards at designated intervals—specifically at 7 days, 14 days, and 28 days. This systematic monitoring will provide a comprehensive overview of the strength development of the concrete over time, allowing for timely adjustments to be made if the concrete does not meet the required performance criteria.
- Maintain meticulous batch records for each mix that document the precise dosage of each admixture utilized, including any variations in material quality or environmental conditions that could affect the mixing process. Additionally, ensure uniformity throughout the mixing process by following standardized mixing times and procedures to minimize variability in the final concrete product. This attention to detail will facilitate better quality control and improve the overall reliability of the concrete.

# TROUBLESHOOTING GUIDE – EXPERT SOLUTIONS

<b>Issue</b>	<b>Potential Cause</b>	<b>Solution</b>
<b>Low Slump Retention</b>	<b>Under-dosing</b>	<b>Increase dosage gradually</b>
<b>Delayed Set</b>	<b>Overdosing or cold weather</b>	<b>Adjust dosage, confirm ambient temp</b>
<b>Segregation</b>	<b>High water content</b>	<b>Reduce water, confirm mix design</b>
<b>Surface Bleeding</b>	<b>Excess admixture or fine content</b>	<b>Adjust mix design, use at correct dosage</b>

---

## 1. Low Slump Retention (Concrete loses workability too quickly)

- **Potential Cause:** Under-dosing of admixture (too little product used).
- **Solution:** Gradually increase the dosage of SNF 2040 until the desired workability and slump retention is achieved. Always adjust in small steps to avoid overdosing.

## 2. Delayed Set (Concrete taking longer to harden)

- **Potential Cause:**
  - Overdosing (too much admixture added).
  - Cold weather conditions slowing down hydration.
- **Solution:**
  - Reduce dosage to the recommended range.
  - Check ambient temperature and ensure curing is done under proper conditions (may need warming or covering in cold weather).

## 3. Segregation (Concrete separating – coarse aggregates sinking, cement paste rising)

- **Potential Cause:** High water content in the mix.
- **Solution:**
  - Reduce water in the mix.
  - Confirm that the mix design is correct and within water-cement ratio limits.
  - Use proper mixing to ensure uniformity.

## 4. Surface Bleeding (Water rising to the surface after placing concrete)

- **Potential Cause:**
  - Excess admixture usage.
  - Too much fine material (sand, silt) in the mix.
- **Solution:**
  - Adjust the mix design to balance fines and water.

# SAFETY PROTOCOLS & ENVIRONMENTAL COMPLIANCE

**Personal Protective Equipment (PPE):** When engaging with this material, it is imperative to don the appropriate personal protective equipment. This includes high-quality, chemical-resistant gloves, such as nitrile or neoprene, which provide a robust barrier against potential chemical exposure. Additionally, safety goggles equipped with side shields are essential to protect your eyes from splashes and airborne particles that could pose a hazard. These precautions are crucial for ensuring your safety during handling and mitigating any risks associated with exposure.

**Handling:** Exercise the utmost caution during the handling process to mitigate any risk of accidental exposure. Avoid direct contact with skin and eyes; should contact occur, it is vital to rinse the affected area thoroughly with copious amounts of water for at least 15 minutes, and seek medical attention if irritation persists. In the event of a spill, act promptly—utilize absorbent materials such as spill kits or appropriate absorbents to efficiently clean the area. Dispose of these materials by local regulations and guidelines to minimize environmental impact, ensuring that they are handled as hazardous waste if necessary.

**Storage:** Store the material in a cool, dry environment, ideally within a temperature range of 50°F to 85°F (10°C to 30°C), away from direct sunlight and any sources of heat, which can compromise its integrity and effectiveness. Ensure that the container is securely sealed after each use to preserve its quality, prevent potential contamination, and avoid leakage. Additionally, maintain proper ventilation in the storage area to prevent the buildup of any harmful vapours.

**Eco-friendliness:** This product is thoughtfully formulated without chlorides and features low levels of volatile organic compounds (VOCs), specifically designed to minimize environmental impact. It meets rigorous green building standards, including certifications such as LEED (Leadership in Energy and Environmental Design), ensuring compatibility with sustainable construction practices. Furthermore, this product actively contributes to healthier indoor air quality by reducing harmful emissions, thereby supporting a more eco-conscious lifestyle for users and occupants alike.



Wear PPE

Handle Carefully



Store Safely

Eco-Friendly

# CONCLUSION: DELIVERING HIGH-PERFORMANCE CONCRETE WITH ADT SNF 2040

In an era where construction demands are becoming increasingly complex, ADT Admix SNF 2040 stands out as a trusted solution for delivering both performance and long-term durability. This advanced sulphonated naphthalene formaldehyde (SNF)-based superplasticizer is specially formulated to meet the high-performance requirements of modern infrastructure, from skyscrapers and bridges to precast elements and ready-mix applications.

By integrating ADT SNF 2040 into your concrete mix design, engineers and contractors can achieve exceptional workability without increasing water content, a factor that leads to stronger, denser, and more durable structures. Reduced permeability ensures concrete is better protected against aggressive environmental conditions such as water ingress, chloride attack, and freeze-thaw cycles — extending the service life of structures and lowering long-term maintenance costs.



Beyond quality enhancements, ADT SNF 2040 optimises construction efficiency. Its ability to maintain slump and improve early strength shortens formwork removal times, accelerates precast turnover, and streamlines pumping in high-rise applications. These benefits translate directly into time savings, cost reductions, and improved productivity on site.

The product's compliance with IS:9103-1999 and ASTM C494 (Type F & G) standards underscores its reliability, while its chloride-free formulation guarantees safety for reinforced concrete. Whether you are targeting high-strength performance, increased durability, or smoother concrete placement, ADT SNF 2040 offers a versatile and dependable solution.

Choosing ADT Admix SNF 2040 is not just about improving a mix — it's about investing in the longevity, safety, and efficiency of the final structure. It empowers construction professionals to deliver projects that meet the most demanding specifications while ensuring consistent, measurable results.

With ADT Admix SNF 2040, you are not just pouring concrete — you are building the future with confidence.

# ABOUT ADT INDUSTRIES & CONTACT INFORMATION

ADT Industries is a reputable leader in the construction chemicals sector, committed to delivering innovative and reliable solutions that enhance concrete performance and durability. Known for its focus on advanced technology and sustainable practices, ADT Industries supports contractors, engineers, and builders by providing high-quality admixtures tailored to modern construction needs.

One of its flagship products, ADT (Admix) SNF 2040, is a sulphonated naphthalene formaldehyde-based superplasticizer designed for high-performance concrete applications. It enables significant water reduction—up to 25%—while improving workability, early strength, and long-term durability of concrete mixes. This chloride-free admixture ensures safety for reinforced concrete structures, making it ideal for a wide range of uses including ready-mix, precast, pumped, and high-strength concretes. Backed by rigorous quality standards and technical support, ADT (Admix) SNF 2040 embodies ADT Industries' commitment to advancing construction technology and helping customers achieve durable, efficient, and cost-effective concrete solutions.

**FOR MORE INFORMATION OR TO PLACE AN ORDER,  
REACH OUT TO ADT INDUSTRIES**



**SHAPING TOMORROW'S INFRASTRUCTURE TODAY.**

[helpdesk@adtchemical.com](mailto:helpdesk@adtchemical.com)



**+91 80800 98992**



**[www.adtchemical.com](http://www.adtchemical.com)**