



Sarvajanik Education Society
Sarvajanik University
Sarvajanik College of Engineering & Technology
Mechanical Engineering Department



Industrial Visit

at

SBC Cooling Pvt. Ltd, Surat

18th April 2026

Introduction

The Mechanical Engineering Department of **Sarvajanik College of Engineering & Technology** successfully organized a specialized industrial visit to **SBC Cooling Pvt. Ltd**, Surat, for its 3rd year students enrolled in the **HVAC course**. Under the guidance of faculty coordinator **Dr. Hiren A. Shah**, the group comprising 18 students and one faculty member engaged in a four-hour immersive session from 12:30 pm to 4:30 pm on **18th April 2026**. This visit offered a vital bridge between academic theory and industrial practice, allowing students to observe the design, fabrication, and assembly of advanced cooling systems. By witnessing the real-world application of heat transfer and fluid mechanics, the students gained a deeper appreciation for the technical precision required in the HVAC industry, effectively enhancing their professional perspective and technical expertise.

About SBC Cooling Pvt Ltd.

SBCC India (SBC Cooling Private Limited) is a specialized manufacturer of industrial refrigeration and cooling solutions, serving sectors such as food processing, pharmaceuticals, chemicals, and textiles. Their extensive product portfolio includes a variety of industrial chilling plants (air-cooled, water-cooled, and brine systems), cold storage solutions like blast freezers and pharma-grade cold rooms, and refrigerated transport vehicles. Additionally, they provide essential infrastructure components such as FRP cooling towers, shell-and-tube heat exchangers, and specialized dairy equipment like bulk milk chillers. By offering both stationary HVAC systems and mobile cooling units, SBCC provides end-to-end thermal management for high-profile clients like Balaji Wafers, Havmor, and various pharmaceutical companies.

Objectives of the Visit

- To understand the working of refrigeration cycles
- To study compressor manufacturing and assembly
- To observe shell and tube heat exchanger construction
- To learn about industrial and transport chillers
- To understand insulation (foam) manufacturing

- To connect theoretical knowledge with industrial practices

Plant Visit and Unit Observations

- **Chiller Fabrication and Assembly:** Workers were observed assembling V-type heavy industrial chillers. This included brazing copper components to create leak-proof, hermetically sealed joints for the refrigerant circuit.
- **Compressor Repairing:** The visit included a study of internal compressor components such as the rotor, stator, bearings, and casing following disassembly for maintenance. Heavy compressor units were transported through the facility using wall-mounted cranes.
- **Heat Exchanger Construction:** Students examined a shell and tube heat exchanger with its tube bundle removed, allowing for a clear view of the internal multiple-tube arrangement used for heat transfer.
- **Condenser Unit Production:** The facility uses specialized machinery to cut, press, and shape aluminum sheets into blue-coated condenser fins, which are designed to improve heat transfer efficiency and corrosion resistance.
- **Refrigeration System Components:** Observation of integrated compressor units featuring interconnected copper piping, expansion devices, and control components. Various refrigerants, specifically **R-404A** and **R-22**, were identified in use.
- **Brine Chiller Systems:** A brine chiller was observed featuring large insulated pipelines and a control panel used to monitor system parameters like temperature and pressure.
- **Insulation Manufacturing:** The plant operates machinery that mixes polyol and isocyanate to produce rigid polyurethane (PU) foam insulation for cold storage and refrigeration systems.
- **Cold Storage and Transport Units:** The visit covered multi-compartment cold storage units designed with thermally insulated panels and airtight doors for transporting temperature-sensitive products like ice cream.
- **Electrical Assembly:** On the first floor, an electrical section was observed producing control panels equipped with relays, contactors, and circuit breakers to manage the refrigeration systems.

Guidance during the Visit

The successful industrial visit to SBC Cooling Pvt. Ltd. was made possible through the essential guidance and support of the company's professional team. Special thanks are extended to **Mr. Nilesh Sheladiya**, the Factory Manager, for granting the necessary permissions and providing the platform for this practical learning experience. **Mr. Ankit** from the Purchase Department and **Mr. Sagar** from the Technical and Operation Department played pivotal roles in the visit's success. Mr. Sagar, in particular, escorted the group through the various manufacturing sections including the chiller fabrication, heat exchanger assembly, and the electrical control

panel departments patiently explaining each technical process and ensuring that every query was addressed with expert insight. Their collective coordination bridge the gap between theoretical mechanical engineering concepts and real-world industrial applications.



Group Photo

Relevance to Mechanical Engineering Students

- **Thermodynamics & RAC:** Provides a real-world look at the **Vapour Compression Refrigeration Cycle**, including the physical integration of compressors, condensers, and evaporators using refrigerants like R-404A and R-22.
- **Heat Transfer:** Offers direct observation of Shell and Tube Heat Exchangers and the manufacturing of aluminium fins, demonstrating how surface area and material properties are engineered to optimize heat rejection.
- **Manufacturing Processes:** Highlights industrial joining techniques such as **precision brazing** of copper lines and the chemical production of **Polyurethane (PU) foam** for thermal insulation.
- **Fluid Mechanics:** Illustrates how large scale industrial systems manage fluid flow through insulated piping and pressurized brine circuits to maintain process temperatures.
- **Machine Design & Maintenance:** Allows students to study the internal mechanical components of **compressors** (rotors, stators, and bearings) and understand the impact of wear, tear, and scaling on machine efficiency.
- **Electromechanical Integration:** Highlights the bridge between mechanical hardware and **electrical control systems**, showing how sensors and control panels regulate complex thermal environments

Attendance sheet

1	ET22BTME003	CHAUHAN ARYAN SURESHBHAI	
2	ET23BTME001	ANKIT THAKUR	
3	ET23BTME004	DANTEL AARON SIBT	
4	ET23BTME007	HARITIK SHARMA	
5	ET23BTME008	HARSH BRIJESH PANDEY	
6	ET23BTME010	JARAWALA SHIV AMIT	
7	ET23BTME011	HORENS KATLAKWALA	
8	ET23BTME012	KHANSABHAI DHATRYA RUPANG	
9	ET23BTME013	KHARATE Vrushabh NARESHBHAI	
10	ET23BTME019	MANAV PATEL	
11	ET23BTME023	PANCHAL PARTH	
12	ET23BTME028	SATLUR KRISHNA HARI LAL	
13	ET23BTME031	THAKOR YASHRAJ GHARAT SINH	
14	ET24BTME801	CHANDAN ARYANKUMAR	
15	ET24BTME802	PANCHAL DEV KALPESH	
16	ET24BTME803	PENGAWALA HARSHIL	
17	ET24BTME804	SHAH VARSHIL PREMALKUMAR	
18	ET24BTME805	THUMMAR SNEH HARSH BHAI	
19	ET21BTME012	GAUVANI UTTAM M.	

Media Coverage



HVAC વિષય માટે મિકેનિકલ વિદ્યાર્થીઓની ઔદ્યોગિક મુલાકાત

વિદ્યાર્થીઓએ ઉત્પાદન પ્રક્રિયાનું નિરીક્ષણ કરી પ્રેક્ટીકલ જ્ઞાન પ્રાપ્ત કર્યું

સુરત, તા. ૨૨

સાંજનિક કોલેજ ઓફ એન્જિનિયરિંગ એન્ડ ટેકનોલોજી, સુરતના મિકેનિકલ એન્જિનિયરિંગ વિભાગના દ્વારા સેમેસ્ટરના વિદ્યાર્થીઓ માટે HVAC (Heating, Ventilation and Air Conditioning) વિષય અંતર્ગત ઔદ્યોગિક પ્રવાસનું આયોજન કરવામાં આવ્યું હતું. વિદ્યાર્થીઓએ SBC Cooling Pvt. Ltd. કંપનીની મુલાકાત લીધી, જે HVAC ક્ષેત્રમાં અગ્રણી ઉદ્યોગ તરીકે જાણીતી છે. આ મુલાકાત દરમિયાન વિદ્યાર્થીઓને વિવિધ પ્રકારના કૂલિંગ સિસ્ટમ, રેફ્રિજરેશન યુનિટ્સ, ચિલર્સ, હીટ એક્સચેન્જર, વોટર ડિસ્પેન્સર અને આઈસક્રીમ વ્હીકલ

જેવા ઉપકરણોના પ્રેક્ટિકલ ઉપયોગ વિશે માર્ગદર્શન આપવામાં આવ્યું. કંપનીના નિષ્ણાતોએ વિદ્યાર્થીઓને આધુનિક HVAC ટેકનોલોજી, એનર્જી કાર્યક્ષમતા અને ઈન્ડસ્ટ્રીયલ એપ્લિકેશન વિશે વિગતવાર સમજ આપી. વિદ્યાર્થીઓએ ખાસ કરીને ચિલર્સ, હીટ એક્સચેન્જર અને કૂલિંગ સિસ્ટમના ડિઝાઇન અને વર્કિંગ પ્રિન્સિપલ્સને નજીકથી સમજી શક્યા. ઉપરાંત, વિદ્યાર્થીઓએ લેબોરેટરી અને ઉત્પાદન વિભાગનું નિરીક્ષણ કરીને પોતાના થિયોરેટિકલ જ્ઞાનને પ્રેક્ટિકલ અનુભવ સાથે જોડવાનો અનમોલ અવસર મેળવ્યો. આ ઔદ્યોગિક પ્રવાસ વિદ્યાર્થીઓ માટે ખૂબ જ જ્ઞાનવર્ધક અને પ્રેરણાદાયક સાબિત થયો. વિભાગના પ્રાધ્યાપકોએ જણાવ્યું કે આવા પ્રવાસો વિદ્યાર્થીઓના ટેકનિકલ વિકાસ માટે ખૂબ જ જરૂરી છે.

Published in Gujarati language Newspaper - Pratap Darpan (Surat Edition)
22nd April 2026; Page number 02