

PROPOSED MASJID AND MADRASA, 78 PEACOCK STREET, GRAVESEND, KENT DA12 1EG

PLANNING NOISE ASSESSMENT

**On behalf of:
Al Haqq Academy**

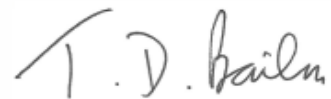
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1.0 INTRODUCTION

- 1.1 Hepworth Acoustics Ltd has been commissioned to carry out a noise assessment in connection with a proposed Masjid and Madrasa at ground floor level in the existing building at 78 Peacock Street, Gravesend, Kent DA12 1EG. The Local Authority is Gravesham Borough Council. The development proposals seek permission for a change of use from a Class Sui generis pub to Class F1(a) 'Education', F1 (f) 'Public Worship' and F2(b) 'Community Hall' of the F use classes. The proposals include for a 65 worshipper capacity Masjid along with a Madrasa for up to 30 children.
- 1.2 This assessment has been requested in connection with a planning application for the development. Currently the ground floor of the building, formerly a public house, is vacant. The applicant proposes to convert this to a Masjid, to facilitate prayer meetings five times a day, as well as a Madrasa for classroom sessions. Prayer times vary throughout the year, and can potentially take place at night, depending on the time of year as well as annual events and other observances. Classroom sessions will be during the daytime only.
- 1.3 To the east of the site is Peacock Street, with residences opposite. To the south is St Andrew's Road, also with residences opposite. To the north and west are further residences. There are residences on the first floor of the building, directly above the proposed Masjid. The site location is shown in Figure 1.
- 1.4 The development includes the Masjid and Madrasa rooms, as well as ablution facilities and WCs. There is no mechanical plant associated with the development other than two small, domestic-scale extract fans for the WCs, which will have negligible noise impact.
- 1.5 The building was formerly used as a public house, The Peacock. The Peacock hosted regular live music and DJ nights with amplified sound. For the proposed development, there will be no amplified sound on site, and no externally-audible *adhan* (call to prayer), so the noise impact is expected to be considerably lower than the previous use.
- 1.6 This assessment has included the following:
- ¶ A site inspection;
 - ¶ A survey of the prevailing environmental noise levels at the site;
 - ¶ Prediction of sound insulation performance between the ground and first floors;

- ¶ Assessment of noise from the Masjid and Madrasa;
- ¶ Assessment of noise due to people coming and going from the Masjid and Madrasa;
- ¶ Assessment of noise impact on nearby noise-sensitive premises.

- 1.7 The party wall between 78 Peacock Street and the adjacent residence is a solid brick, double-leaf cavity wall. There is a corridor between the Masjid itself and the party wall.
- 1.8 All recommendations in this report are given for acoustics reasons only. Compliance with other requirements (e.g. fire, structural, thermal, security, etc.) must be checked by others.
- 1.9 The various noise units and indices referred to in this report are described in Appendix I. All noise levels mentioned in the text have been rounded to the nearest decibel, as fractions of decibels are imperceptible.

2.0 ACOUSTIC DESIGN CRITERIA

- 2.1 The *National Planning Policy Framework* (NPPF), December 2024, provides some general guidance to local authorities on taking noise into account in planning policies and decisions. NPPF paragraph 198, a) states that planning policies and decisions should “mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life”.
- 2.2 Gravesham Borough Council has no specific noise limits for residences, but encourages the use of British Standard 8233: 2014 *Guidance on sound insulation and noise reduction for buildings*, where appropriate. This is referred to as BS 8233 hereon.
- 2.3 BS 8233 recommends guidance on design criteria for acceptable noise levels within residential accommodation. BS 8233 guidelines for the daytime (07:00 – 23:00) and night-time (23:00 – 07:00) periods are summarised in Table 1.

Table 1: BS 8233 recommended acoustic design criteria

Activity	Location	Internal Noise Levels	
		Daytime 07:00 – 23:00	Night-time 23:00 – 07:00
Resting	Living room	35 dB $L_{Aeq,16hr}$	-
Dining	Dining room / area	40 dB $L_{Aeq,16hr}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$

- 2.4 BS 8233 clarifies that the above guidance relates only to noise without ‘specific character’ (e.g. such as that which has a distinguishable, discrete and continuous tone, is irregular enough to attract attention, or has strong low-frequency content) and that where such characteristics are present, lower noise limits might be appropriate.
- 2.5 The type of noise associated with the proposed Masjid and Madrasa has ‘specific character’. To account for this, we recommend that any noise intrusion from the ground floor to the residences above should be controlled to be within NR 20 for living rooms during the daytime, and NR 15 for bedrooms at night. These are equivalent to no more than around 28 dB L_{Aeq} and 23 dB L_{Aeq} , respectively, and are therefore well within the BS 8233 design limits stated in Table 1.
- 2.6 BS 8233 also recognises that regular individual noise events at night can cause sleep disturbance. Peaks of noise from individual events are usually described in terms of L_{Amax} values and these can be highly variable and unpredictable. Research described in WHO *Community Noise Guidelines* states, “for a

good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB L_{Amax} more than 10-15 times per night". That threshold is therefore 22 dB(A) above the night-time L_{Aeq} criterion value as stated above.

- 2.7 Other relevant guidance that has been used for similar developments include the World Health Organisation Guidelines for Community Noise (1999). This states the following:

Annoyance to community noise varies with the type of activity producing the noise. Speech communication, relaxation, listening to the radio and TV are all examples of noise-producing activities. During the daytime, few people are seriously annoyed by activities with L_{Aeq} level below 55 dB; or moderately annoyed with L_{Aeq} levels below 50 dB. Sound pressure levels during the evening and night should be 5 – 10 dB lower than during the day.

- 2.8 British Standard 4142: 2014 'Methods for rating and assessing industrial and commercial sound' describes methods for rating and assessing sound of an industrial and/or commercial nature. This standard explicitly excludes noise from people, so it is not applicable to this project.

3.0 NOISE SURVEYS

Environmental Noise

- 3.1 Environmental noise measurements were carried out at the site to determine the prevailing ambient noise levels of the area. Noise levels were measured at Location 1 on the flat roof at the rear of the building, in a position representative of the noise environment outside the nearest residences. The location is marked on Figure 1.
- 3.2 The noise measurements were taken for 48 hours, starting at 16:15 on Wednesday 29th January 2025. Measurements were taken in sequential 15-minute samples.
- 3.3 The measurement microphone was mounted on a tripod, around 1.5 metres above first-floor roof level, in 'free-field' conditions.
- 3.4 The weather conditions throughout the noise survey were mild, dry, and overcast, with wind speeds below 5 m/s. Wind was from the southwest. These were considered suitable conditions for the survey.
- 3.5 The results of the noise survey are detailed in Appendix II. The measured noise levels are summarised in Table 2. The L_{Aeq} and L_{A90} values in Table 2 are the logarithmic and arithmetic average respectively of the samples for the relevant time period.

Table 2: Environmental noise levels summary (dBA)

Location	Time	Noise level		
		$L_{Amax,f}$	$L_{Aeq,T}$	$L_{A90,T}$
1	Daytime	54 – 89	49	44
	Night-time	47 – 77	43	40

- 3.6 The dominant noise source was road traffic on Peacock Road and St Andrew's Road.

Masjid and Madrasa Noise Levels

- 3.7 Noise measurements were previously taken by Hepworth Acoustics inside an existing Masjid and Madrasa at 440 Hornsey Road, London N19 4EB for one hour from 13:00 on Friday 8th June 2018. This time was selected following consultation with members to be representative of a typical busy period, thus representing a worst-case scenario. This Masjid and Madrasa is of a similar size and capacity to the one proposed for 78 Peacock Street.

- 3.8 The sound level meter was mounted on a tripod, with the microphone at 1.5 metres above floor level, at least 1 metre from any other acoustically reflective surface, and moved around the room to obtain an average reading. The results are summarised in Table 3.

Table 3: Typical internal Masjid and Madrasa noise levels (dB)

Description	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
L_{eq}	66	60	61	56	55	54	55	51	62
Typical $L_{max,f}$	80	79	76	72	70	67	66	62	76

- 3.9 Therefore, the Masjid and Madrasa noise is characterised by fairly low average noise levels, consistent with those generated through normal domestic activity.

Sound Level Meter Details

- 3.10 The environmental noise measurements at Location 1 were carried out using a NTi XL2-TA 'Class 1' sound level meter (serial no. A2A-20294-E0), fitted with a windshield.
- 3.11 Noise measurements inside the Masjid and Madrasa at 440 Hornsey Road were carried out using a Brüel & Kjær Type 2250 sound level meter (serial no. 3011626).
- 3.12 Both meters were fitted with windshields. Both meters have independent laboratory calibration certification valid for the date of all measurements.
- 3.13 The calibration levels of the meters were checked before and after the surveys with a Brüel & Kjær Type 4231 sound calibrator (serial no. 2412667). No significant calibration deviation was observed.

4.0 ASSESSMENT

Noise Break Out

- 4.1 We understand that the existing frontage, glazing, and entry doors for the ground floor will be retained. We would expect this to provide an overall sound reduction comfortably in excess of 20 dB R_w .
- 4.2 Based on the reference noise levels shown in Table 3, and by taking typical values for the sound reduction indices (SRIs) equating to 20 dB R_w for a cautious assessment, as well as the area of the façade, the noise break-out levels at 10 metres have been calculated, as shown in Table 4.

Table 4: Predicted Noise Break-Out at 10 metres from Frontage

	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
Internal Noise L_{eq}	66	60	61	56	55	54	55	51	62
Internal Noise L_{max}	80	79	76	72	70	67	66	62	76
Frontage SRI	12	15	20	25	25	23	20	20	
Noise Break-Out L_{eq}	34	25	21	11	10	11	15	11	21
Noise Break-Out L_{max}	48	44	36	27	25	24	26	22	35

- 4.3 To note, 10 metres is representative of the most-affected residential window to the front.
- 4.4 Break out noise reflecting or refracting back to the first-floor residences above 78 Peacock Street is not expected to be significant.
- 4.5 The predicted worst-case noise break-out levels are considerably lower than the corresponding baseline noise levels set out in Table 2. They are also well within the limits proposed in the World Health Organisation Guidelines for Community Noise (1999). Therefore, no adverse impacts due to break out of noise through the premises frontage are anticipated. The Masjid and Madrasa noise levels within any nearby residences will be well within the limits stated in Section 2.

Internal Sound Insulation

- 4.6 We understand that the separating construction between the first floor flat and the ground floor Masjid is as follows:

- ¶ Existing floor finish on timber floorboards in the first-floor residence.
- ¶ Existing timber joists.

¶ Existing ceiling, damaged and broken in places, with large holes.

4.7 We recommend that the existing ceiling is removed and replaced, and the separating construction between the Masjid and the flat above is enhanced to achieve sound insulation performance of at least 53 dB $D_{nT,w} + C_{tr}$.

4.8 This can be achieved using either of options one or two described below, or an approved equivalent.

Option 1: Isolation Clips

- ¶ 22 mm thick cement particle board (min. surface mass of 28 kg/m², e.g., iKoustic Versafloor)
- ¶ Existing floorboards (any broken/incomplete boards replaced, and all gaps sealed to airtight condition)
- ¶ All voids between the existing timber joists to be filled entirely with 150 mm thick RW3 mineral wool insulation (min. density of 60 kg/m³)
- ¶ New plasterboard ceiling with 1no. 15mm thick British gypsum SoundBloc or FireLine plasterboard lining (min. surface mass of 12.5 kg/m²) fixed to the existing joists.
- ¶ Resilient isolation clips and furring channels (e.g., iKoustic MuteClips, Pliteq GenieClips, Kinetics IsoMax, or approved equal) fixed to the underside of the ceiling.
- ¶ 3no. 12.5 mm thick British gypsum SoundBloc or FireLine plasterboard lining (min. surface mass of 12.5 kg/m²) with 25 mm thick RW3 mineral wool insulation (min. density of 60 kg/m³) on top.

Option 2: Independent Suspended Ceiling

- ¶ 22mm cement particle board (min. surface mass of 28 kg/m², e.g., iKoustic Versafloor)
- ¶ Existing floorboards (any broken/incomplete boards replaced, and all gaps sealed to airtight condition)
- ¶ All voids between the existing timber joists to be filled entirely with 150 mm thick RW3 mineral wool insulation (min. density of 60 kg/m³)
- ¶ New plasterboard ceiling with 1no. 15mm thick British gypsum SoundBloc or FireLine plasterboard lining (min. surface mass of 12.5 kg/m²) fixed to the existing joists.

- ¶ Minimum 100 mm deep air cavity
- ¶ Independent acoustic ceiling on resilient hangers using 2no. 15mm thick British gypsum SoundBloc or FireLine plasterboard lining (min. surface mass of 12.5 kg/m²) with 50 mm thick RW3 mineral wool insulation (min. density of 60 kg/m³) on top.
- ¶ It is important that the independent acoustic ceiling is not structurally adjoined to the ceiling above and that the 100 mm air cavity is not breached with any rigid connections. If the ceiling needs to be supported from the existing joists, then all ties should be kept to the minimum possible and resilient acoustic hangers must be used. The new acoustic ceiling must be designed by a competent structural engineer to ensure that the span is acceptable.

4.9 We also recommend the following measures:

- ¶ The new SoundBloc or FireLine boards should be staggered, and sealed at the perimeter with suitable non-hardening sealant to ensure an air-tight seal.
- ¶ There must be no penetrations, gaps, downlighters, louvres, vents, or openings in the acoustic ceiling.
- ¶ The acoustic ceiling should cover the entirety of the separating construction between the ground floor and the flat above.

4.10 With the above recommendations, if built correctly and to a good standard of workmanship, the separating floor/ceiling is predicted to achieve the sound insulation performance shown in Table 5. This has been predicted using Insul version 9.0.23 sound insulation prediction software, and is consistent with our experience of testing similar constructions.

Table 5: Floor/ceiling sound insulation performance prediction

Description	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Sound reduction performance (dB)	23	39	48	52	53	58	71	72

4.11 Based on the reference noise levels shown in Table 3 and the sound insulation prediction shown in Table 5, the noise intrusion to the first-floor flat is predicted to be within the recommended noise intrusion limits stated in Section 2. Therefore, it is concluded that no further sound enhancement measures are required for the separating floor/ceiling element, beyond those recommended in Paragraphs 4.7 and 4.8. The calculation is shown in Table 6:

Table 6: Masjid noise intrusion (dB)

Description	Sound Pressure Levels (dB L_{eq})							
	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Ground floor Masjid noise	66	60	61	56	55	54	55	51
Sound insulation performance	23	39	48	52	53	58	71	72
1 st floor noise intrusion	43	21	13	4	2	-4	-16	-21
NR15	47	35	26	19	15	12	9	7
Comparison (Masjid noise – NR 15)	-4	-14	-13	-15	-13	-16	-25	-28

- 4.12 On the same basis, the $L_{max,f}$ Masjid noise intrusion to the flat above is also predicted to be within the limit proposed in Paragraph 2.7.
- 4.13 As general good practice, we recommend that the ceiling in the ground floor space is kept in good condition in future, repairing any gaps or holes that may appear, to ensure the sound insulation performance is maintained.
- 4.14 We do not anticipate there to be potential for noise disturbance to or from the adjacent residence through the party wall, since the sound insulation performance of the wall will be significantly higher than the separating floor assessed in Table 6.

Coming and Going

- 4.15 This section is to consider the potential noise impact at night from attendees arriving at or leaving from the premises. Based on our experience monitoring similar premises, users do not make significant noise when arriving or leaving.
- 4.16 The *sheikh*/teacher on site may request attendees to leave quietly, especially at night. This can be reinforced by appropriate signage at the building exit.
- 4.17 Based on the locality of the site in an existing residential area, it is expected that the majority of people visiting will access the site on foot. It is considered a 'reward' within the religion to walk to prayers and is considered a form of worshipping in itself; this will be promoted by staff at the site.
- 4.18 Attendees are therefore mainly expected to arrive at the premises on foot, with some on bicycle, which does not generate significant noise levels.

- 4.19 We understand that a Travel Plan has been submitted, which highlights the strategy to minimise single occupancy car use. The applicant is committed to minimising disruption on the local community, and therefore the Travel Plan has set out measures to increase awareness of sustainable modes of transport, including public transport and active travel means.
- 4.20 The site is well located to access public transport provision, including Gravesend Railway Station and several local bus routes, therefore offering the opportunity for combined journeys by walking and public transport.
- 4.21 Those who still wish to drive to the site will be encouraged to utilise the public car park located on Parrock Street, a short walk away from the site. Drivers will also be made aware of the benefits of car-sharing which should lead to a further reduction in vehicular use.
- 4.22 Based on the above, the number of cars arriving at the building itself is expected to be small, with a low impact on noise levels in the immediate vicinity of 78 Peacock Street compared to the existing noise environment.

5.0 CONCLUSIONS

- 5.1 A noise assessment of the proposed Masjid and Madrasa at 78 Peacock Street, Gravesend has been carried out.
- 5.2 This assessment has involved carrying out a baseline noise monitoring survey to establish the existing noise climate outside the building.
- 5.3 Suitable limits for noise intrusion to residences have been established based on relevant current standards and guidance documents.
- 5.4 Noise measurements previously made in an existing Masjid and Madrasa have been used to provide reference internal noise levels for the expected activities at the proposed development.
- 5.5 Noise breakout through the building elevations is predicted to be low, and no specific acoustic enhancements to the building façade or glazing is necessary.
- 5.6 Recommendations to enhance the sound insulation performance of the separating floor between the ground floor and the flat above have been provided.
- 5.7 Based on the reference noise levels and the sound insulation predictions for the new separating floor/ceiling, noise intrusion to the residences above is predicted to be within suitable limits.
- 5.8 Comments on the likely noise impact of attendees arriving at and leaving from the premises have also been provided. The noise impact from this source is expected to be low.
- 5.9 By following the recommendations in this report, we conclude that the noise impact of the proposed development will not result in any discernible loss of amenity to local residents.

Figure 1 – Site Location



NB: Development site outlined in red.

Appendix I: Noise Units & Indices

Sound and the decibel

A sound wave is a small fluctuation of atmospheric pressure. The human ear responds to these variations in pressure, producing the sensation of hearing. The ear can detect a very wide range of pressure variations. In order to cope with this wide range of pressure variations, a logarithmic scale is used to convert the values into manageable numbers. Although it might seem unusual to use a logarithmic scale to measure a physical phenomenon, it has been found that human hearing also responds to sound in an approximately logarithmic fashion. The dB (decibel) is the logarithmic unit used to describe sound (or noise) levels. The usual range of sound pressure levels is from 0 dB (threshold of hearing) to 120 dB (threshold of pain).

Due to the logarithmic nature of decibels, when two noises of the same level are combined together, the total noise level is (under normal circumstances) 3 dB(A) higher than each of the individual noise levels e.g. 60 dB(A) plus 60 dB(A) = 63 dB(A). In terms of perceived 'loudness', a 3 dB(A) variation in noise level is a relatively small (but nevertheless just noticeable) change. An increase in noise level of 10 dB(A) generally corresponds to a doubling of perceived loudness. Likewise, a reduction in noise level of 10 dB(A) generally corresponds to a halving of perceived loudness.

The ear is not equally sensitive to sound at all frequencies. It is less sensitive to sound at low and very high frequencies, compared with the frequencies in between. Therefore, when measuring a sound made up of different frequencies, it is often useful to 'weight' each frequency appropriately, so that the measurement correlates better with what a person would actually hear. This is usually achieved by using an electronic filter called the 'A' weighting, which is built into sound level meters. Noise levels measured using the 'A' weighting are denoted dB(A) or dBA.

Frequency and Hertz (Hz)

As well as the loudness of a sound, the frequency content of a sound is also very important. Frequency is a measure of the rate of fluctuation of a sound wave. The unit used is cycles per second, or hertz (Hz). Sometimes large frequency values are written as kiloHertz (kHz), where 1 kHz = 1000 Hz.

Young people with normal hearing can hear frequencies in the range 20 Hz to 20 kHz. However, the upper frequency limit gradually reduces as a person gets older.

Glossary of Terms

- $L_{Aeq,T}$ This is the A-weighted 'equivalent continuous noise level' which is an average of the total sound energy measured over a specified time period, T. In other words, $L_{Aeq,T}$ is the level of a continuous noise which has the same total (A-weighted) energy as the real fluctuating noise, measured over the same time period, T. It is increasingly being used as the preferred parameter for all forms of environmental noise.
- $L_{Amax,f}$ This is the maximum A-weighted noise level that was recorded during a sample duration, with the sound level meter on the 'fast' setting.
- $L_{A90,T}$ This is the A-weighted noise level exceeded for 90% of the time period, T. $L_{A90,T}$ is used as a measure of background noise.
- D Level difference, effectively $D = \text{source level} - (\text{receiver level corrected for background level})$.
- D_{nT} Standardised level difference, standardised to a receiver room reverberation time of 0.5 seconds, $D_{nT} = D + 10 \log (RT/RT_0)$.
- $D_{nT,w}$ Weighted standardised level difference, a single figure generated by comparing the D_{nT} with a reference curve. The reference curve is shifted in 1 dB steps until the sum of adverse deviation of the test curve, compared to the reference curve, is as large as possible, but no more than 32.0 dB. The value of the shifted reference curve at 500 Hz is taken as the $D_{nT,w}$. N.B. As $D_{nT,w}$ for airborne transmission represents a level difference, an improvement generates a larger figure.
- C_{tr} A 'spectrum adaptation term' used to correct the $D_{nT,w}$ in order to reflect low frequency performance of the wall or floor tested.

Appendix II: Noise Survey Results

Location 1

Equipment: Nti XL2-TA 'Class 1' sound level meter (serial no. A2A-20294-E0) with tripod and windshield

Weather: Dry, wind speed below 5 m/s

All levels in dB re 20 μ Pa.

Date	Start Time	Duration (h:mm:ss)	$L_{Aeq,T}$	$L_{Amax,f}$	$L_{A90,T}$
29/01/2025	16:15:00	0:15:00	49	64	40
29/01/2025	16:30:00	0:15:00	50	78	42
29/01/2025	16:45:00	0:15:00	52	66	43
29/01/2025	17:00:00	0:15:00	51	64	41
29/01/2025	17:15:00	0:15:00	50	67	42
29/01/2025	17:30:00	0:15:00	49	69	41
29/01/2025	17:45:00	0:15:00	51	65	42
29/01/2025	18:00:00	0:15:00	50	65	42
29/01/2025	18:15:00	0:15:00	50	65	42
29/01/2025	18:30:00	0:15:00	50	64	48
29/01/2025	18:45:00	0:15:00	50	66	48
29/01/2025	19:00:00	0:15:00	50	68	42
29/01/2025	19:15:00	0:15:00	47	64	41
29/01/2025	19:30:00	0:15:00	50	66	43
29/01/2025	19:45:00	0:15:00	47	63	41
29/01/2025	20:00:00	0:15:00	46	64	40
29/01/2025	20:15:00	0:15:00	50	66	40
29/01/2025	20:30:00	0:15:00	45	64	40
29/01/2025	20:45:00	0:15:00	46	63	42
29/01/2025	21:00:00	0:15:00	48	67	41
29/01/2025	21:15:00	0:15:00	46	69	40
29/01/2025	21:30:00	0:15:00	44	65	40
29/01/2025	21:45:00	0:15:00	48	72	40
29/01/2025	22:00:00	0:15:00	42	55	39
29/01/2025	22:15:00	0:15:00	45	65	39
29/01/2025	22:30:00	0:15:00	46	73	39
29/01/2025	22:45:00	0:15:00	42	58	39
29/01/2025	23:00:00	0:15:00	42	62	38
29/01/2025	23:15:00	0:15:00	40	55	37
29/01/2025	23:30:00	0:15:00	39	58	37
29/01/2025	23:45:00	0:15:00	40	55	37
30/01/2025	00:00:00	0:15:00	40	59	37
30/01/2025	00:15:00	0:15:00	38	59	36
30/01/2025	00:30:00	0:15:00	40	51	37

30/01/2025	00:45:00	0:15:00	39	53	37
30/01/2025	01:00:00	0:15:00	38	50	35
30/01/2025	01:15:00	0:15:00	40	68	35
30/01/2025	01:30:00	0:15:00	38	53	36
30/01/2025	01:45:00	0:15:00	38	52	35
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30/01/2025	03:30:00	0:15:00	40	58	37
30/01/2025	03:45:00	0:15:00	42	54	38
30/01/2025	04:00:00	0:15:00	40	53	38
30/01/2025	04:15:00	0:15:00	42	63	38
30/01/2025	04:30:00	0:15:00	41	62	38
30/01/2025	04:45:00	0:15:00	47	62	39
30/01/2025	05:00:00	0:15:00	45	72	39
30/01/2025	05:15:00	0:15:00	43	53	41
30/01/2025	05:30:00	0:15:00	45	58	43
30/01/2025	05:45:00	0:15:00	46	59	43
30/01/2025	06:00:00	0:15:00	46	63	43
30/01/2025	06:15:00	0:15:00	50	68	44
30/01/2025	06:30:00	0:15:00	48	67	44
30/01/2025	06:45:00	0:15:00	47	65	45
30/01/2025	07:00:00	0:15:00	50	74	46
30/01/2025	07:15:00	0:15:00	50	64	46
30/01/2025	07:30:00	0:15:00	50	72	46
30/01/2025	07:45:00	0:15:00	50	62	47
30/01/2025	08:00:00	0:15:00	51	62	47
30/01/2025	08:15:00	0:15:00	51	66	47
30/01/2025	08:30:00	0:15:00	51	71	47
30/01/2025	08:45:00	0:15:00	51	67	46
30/01/2025	09:00:00	0:15:00	50	73	44
30/01/2025	09:15:00	0:15:00	48	67	43
30/01/2025	09:30:00	0:15:00	48	61	43
30/01/2025	09:45:00	0:15:00	48	70	43
30/01/2025	10:00:00	0:15:00	49	68	43
30/01/2025	10:15:00	0:15:00	49	67	42
30/01/2025	10:30:00	0:15:00	49	70	42
30/01/2025	10:45:00	0:15:00	50	64	42
30/01/2025	11:00:00	0:15:00	48	66	42
30/01/2025	11:15:00	0:15:00	48	66	42
30/01/2025	11:30:00	0:15:00	49	71	41
30/01/2025	11:45:00	0:15:00	47	66	41
30/01/2025	12:00:00	0:15:00	49	67	41

30/01/2025	12:15:00	0:15:00	50	65	41
30/01/2025	12:30:00	0:15:00	48	67	42
30/01/2025	12:45:00	0:15:00	51	72	42
30/01/2025	13:00:00	0:15:00	46	63	42
30/01/2025	13:15:00	0:15:00	47	63	41
30/01/2025	13:30:00	0:15:00	48	64	42
30/01/2025	13:45:00	0:15:00	49	77	42
30/01/2025	14:00:00	0:15:00	49	67	42
30/01/2025	14:15:00	0:15:00	49	75	42
30/01/2025	14:30:00	0:15:00	48	63	43
30/01/2025	14:45:00	0:15:00	51	68	45
30/01/2025	15:00:00	0:15:00	50	73	44
30/01/2025	15:15:00	0:15:00	51	72	45
30/01/2025	15:30:00	0:15:00	52	74	45
30/01/2025	15:45:00	0:15:00	50	72	45
30/01/2025	16:00:00	0:15:00	49	68	43
30/01/2025	16:15:00	0:15:00	49	68	44
30/01/2025	16:30:00	0:15:00	48	63	43
30/01/2025	16:45:00	0:15:00	54	73	44
30/01/2025	17:00:00	0:15:00	49	63	44
30/01/2025	17:15:00	0:15:00	49	65	44
30/01/2025	17:30:00	0:15:00	48	65	43
30/01/2025	17:45:00	0:15:00	49	63	43
30/01/2025	18:00:00	0:15:00	48	65	43
30/01/2025	18:15:00	0:15:00	50	64	44
30/01/2025	18:30:00	0:15:00	50	68	44
30/01/2025	18:45:00	0:15:00	48	65	44
30/01/2025	19:00:00	0:15:00	47	58	44
30/01/2025	19:15:00	0:15:00	46	58	43
30/01/2025	19:30:00	0:15:00	47	64	44
30/01/2025	19:45:00	0:15:00	48	63	43
30/01/2025	20:00:00	0:15:00	45	59	43
30/01/2025	20:15:00	0:15:00	46	59	42
30/01/2025	20:30:00	0:15:00	46	61	42
30/01/2025	20:45:00	0:15:00	45	57	42
30/01/2025	21:00:00	0:15:00	45	65	42
30/01/2025	21:15:00	0:15:00	46	64	42
30/01/2025	21:30:00	0:15:00	48	69	42
30/01/2025	21:45:00	0:15:00	45	57	42
30/01/2025	22:00:00	0:15:00	45	55	43
30/01/2025	22:15:00	0:15:00	45	64	42
30/01/2025	22:30:00	0:15:00	44	54	41
30/01/2025	22:45:00	0:15:00	43	61	41
30/01/2025	23:00:00	0:15:00	44	62	41
30/01/2025	23:15:00	0:15:00	41	53	40
30/01/2025	23:30:00	0:15:00	43	62	40

30/01/2025	23:45:00	0:15:00	42	57	40
31/01/2025	00:00:00	0:15:00	41	52	39
31/01/2025	00:15:00	0:15:00	41	51	39
31/01/2025	00:30:00	0:15:00	45	77	40
31/01/2025	00:45:00	0:15:00	45	62	40
31/01/2025	01:00:00	0:15:00	42	55	40
31/01/2025	01:15:00	0:15:00	42	52	40
31/01/2025	01:30:00	0:15:00	43	54	41
31/01/2025	01:45:00	0:15:00	42	61	40
31/01/2025	02:00:00	0:15:00	42	56	40
31/01/2025	02:15:00	0:15:00	41	49	39
31/01/2025	02:30:00	0:15:00	42	57	40
31/01/2025	02:45:00	0:15:00	43	60	40
31/01/2025	03:00:00	0:15:00	42	59	40
31/01/2025	03:15:00	0:15:00	42	47	40
31/01/2025	03:30:00	0:15:00	42	50	41
31/01/2025	03:45:00	0:15:00	42	54	39
31/01/2025	04:00:00	0:15:00	42	52	40
31/01/2025	04:15:00	0:15:00	43	60	41
31/01/2025	04:30:00	0:15:00	47	65	44
31/01/2025	04:45:00	0:15:00	46	61	44
31/01/2025	05:00:00	0:15:00	49	63	46
31/01/2025	05:15:00	0:15:00	47	63	45
31/01/2025	05:30:00	0:15:00	48	61	45
31/01/2025	05:45:00	0:15:00	50	61	46
31/01/2025	06:00:00	0:15:00	50	62	47
31/01/2025	06:15:00	0:15:00	51	68	47
31/01/2025	06:30:00	0:15:00	50	62	48
31/01/2025	06:45:00	0:15:00	51	65	48
31/01/2025	07:00:00	0:15:00	50	67	47
31/01/2025	07:15:00	0:15:00	50	66	48
31/01/2025	07:30:00	0:15:00	50	65	48
31/01/2025	07:45:00	0:15:00	52	69	49
31/01/2025	08:00:00	0:15:00	52	77	49
31/01/2025	08:15:00	0:15:00	51	61	48
31/01/2025	08:30:00	0:15:00	52	67	48
31/01/2025	08:45:00	0:15:00	54	76	49
31/01/2025	09:00:00	0:15:00	53	71	49
31/01/2025	09:15:00	0:15:00	51	70	48
31/01/2025	09:30:00	0:15:00	53	64	49
31/01/2025	09:45:00	0:15:00	53	68	48
31/01/2025	10:00:00	0:15:00	52	62	48
31/01/2025	10:15:00	0:15:00	51	61	48
31/01/2025	10:30:00	0:15:00	49	63	46
31/01/2025	10:45:00	0:15:00	49	64	46
31/01/2025	11:00:00	0:15:00	49	62	45

31/01/2025	11:15:00	0:15:00	49	65	45
31/01/2025	11:30:00	0:15:00	51	74	43
31/01/2025	11:45:00	0:15:00	49	70	44
31/01/2025	12:00:00	0:15:00	50	65	44
31/01/2025	12:15:00	0:15:00	54	81	45
31/01/2025	12:30:00	0:15:00	56	89	44
31/01/2025	12:45:00	0:15:00	50	65	45
31/01/2025	13:00:00	0:15:00	50	73	44
31/01/2025	13:15:00	0:15:00	52	80	44
31/01/2025	13:30:00	0:15:00	52	69	44
31/01/2025	13:45:00	0:15:00	54	80	47
31/01/2025	14:00:00	0:15:00	50	63	45
31/01/2025	14:15:00	0:15:00	50	65	44
31/01/2025	14:30:00	0:15:00	50	67	44
31/01/2025	14:45:00	0:15:00	50	76	44
31/01/2025	15:00:00	0:15:00	51	67	44
31/01/2025	15:15:00	0:15:00	52	66	46
31/01/2025	15:30:00	0:15:00	52	69	45
31/01/2025	15:45:00	0:15:00	52	66	44
31/01/2025	16:00:00	0:15:00	53	72	45